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# Sociocultural Factors Influencing the Food Choices of 16-18 year-old Indigenous Fijian Females at School

Gade Waqa\*  
Helen Mavoa\*\*

\*Coordinator, Healthy Youth, Healthy Community Project, Fiji School of Medicine, Fiji. g.waqa@fsm.ac.fj \*\*Research Fellow, Obesity Prevention in Communities (OPIC) project, School of Psychology, Deakin University.

## Abstract

Few studies have addressed Sociocultural factors underlying healthy lifestyles. The Sociocultural component of the Obesity Prevention in Communities (OPIC) project explores social and cultural factors that may promote or protect against obesity via adolescents' values, attitudes, beliefs and explanations for their patterns of eating and physical activity, as well as preferred body size. This paper reports on semi-structured interviews conducted with a sub-sample of indigenous Fijian females in terms of their descriptions of and explanations for their at-school eating patterns. While participants understood which foods and drinks were healthy, many skipped breakfast, and ate junk at recess and after school. The main reasons for these unhealthy eating patterns were poor time management in the mornings, and access to discretionary spending money for junk food. Participants cited family members and friends as key influences on their eating patterns. Findings were used to develop intervention strategies to encourage the regular consumption of healthy food at home and at school. (PHD 2006 Vol 13 No 2 Pages 57 - 64)

## Background

Nearly half of the adult population in Fiji is either overweight or obese.<sup>1</sup> There is a higher prevalence of obesity in Fiji females compared to males.<sup>1,2</sup> There is a high prevalence of obesity in Fiji children, with one pilot study reporting that 22% and 17% of indigenous Fijian participants in Forms 3 and 5 in three schools were overweight and obese, respectively.<sup>2</sup> Almost twice as many females as males were either overweight (25% vs 13%) or obese (21% vs 11%). Obesity appears to be increasing in Fiji<sup>1,3,4</sup> and at all ages. The 2002 Ministry of Health reported a rapid increase in the prevalence of overweight and obesity in Fiji prior to the age of 30 years.<sup>1</sup> In addition, the prevalence of obesity in Fiji children doubled from less than 10% of children during the early 1990s, to 20% in 2001.<sup>3</sup>

It is important to target childhood obesity for several reasons. First, obese children are more likely to become obese adults compared to leaner peers.<sup>5,6</sup> Second, obesity increases the risk of non-communicable diseases (NCDs), including diabetes, hypertension, heart diseases and some cancers.<sup>7</sup> The burden of NCDs in Fiji has increased rapidly, accounting for almost 70% of deaths in Fiji in 2000.<sup>1</sup> Third, adolescents are the next generation of parents and are likely to influence their children's patterns of eating, physical activity and associated body size.

## Diets

Obesity occurs when energy input (food eaten) exceeds energy expenditure (physical activity). The diets of

contemporary indigenous Fijian females have been reported to be high in sugar and fat and low in fibre and traditional carbohydrate foods, such as taro, breadfruit, and cassava.<sup>7,8</sup> This shift from a traditional diet rich in minerals, vitamins proteins and fibre to a less healthy diet has been attributed to cost and taste.<sup>2</sup>

Little is known about the at-school eating patterns. Bell and Swinburn (2004) reported that Australian children consumed around 37% of their daily food intake at school.<sup>9</sup> At-school diets were typically energy-dense foods and fruit intake was low. The 14% of children who bought food from the canteens obtained more energy from fast foods, packaged snacks, desserts, milk and sweets compared to children who brought food from home. Further, girls (39.5%) obtained more energy from school food compared to boys (35.7%). Moore (2003) reported that Pacific children in New Zealand preferred western foods that were high in saturated fats, sugar and salt rather than healthier options.<sup>10</sup>

Studies suggest that the at-school diets of primary school children in Fiji<sup>11</sup> and Tonga<sup>12</sup> are also high in sugar and/or fat. It appears that Fijian adolescents follow this trend of a high intake of energy-dense foods that are high in fat, sugar and refined carbohydrates. Khan et al. (2004) reported that 53% of Forms 3 and 5 students (n=967) ate fried foods 1-4 times a day.<sup>2</sup> It is interesting that 28.6% of participants who were either overweight or obese ate fried foods more frequently than their more slender peers.

## Sociocultural influences on eating patterns

While there are some data on the eating patterns of children and adolescents in Fiji, little is known about social and cultural factors that determine their food choices.

The school environment is likely to influence children's at-school eating patterns in terms of availability, cost of food, peer influences and preference.<sup>13,14</sup> Fuamatu (1997) suggested that familiarity contributed to the food choices of Samoan teenagers in Auckland.<sup>13</sup> Few studies have explored how the sociocultural environment impacts on eating patterns in the Pacific generally and in Fiji, specifically.

It is important to establish whether adolescents are aware of the foods that contribute to a healthy and balanced diet, what they eat at school and the underlying reasons for these choices, given that the increasing prevalence of overweight and obesity in children and young people in many developed countries, a trend that is likely to be reflected among indigenous Fijian adolescents. It is especially important to determine the eating patterns of indigenous Fijian females, given that this group has a higher prevalence of obesity than males,<sup>2</sup> and that Australian females have been shown to consume more energy at schools than males.<sup>9</sup>

#### **The Healthy Youth Healthy Community Project**

The Obesity Prevention in Community Project (OPIC) project aims to identify how experimental community-based intervention programmes in Fiji, Tonga, New Zealand and Australia impact on patterns of eating and physical activity and body size (see Swinburn et al. this volume). The Healthy Youth Healthy Community (HYHC) project is the Fiji component of the OPIC study. The sociocultural component of the OPIC project aims to determine the sociocultural basis for adolescents' eating and physical activity patterns, and their preferred body size, from the perspective of adolescents themselves. The HYHC project targets indigenous Fijian and IndoFijian adolescents residing in peri-urban Suva, in an area situated in the Nasinu-Nadera corridor and bounded by the Rewa River and the main road between Suva city and Nausori. Increasing numbers of rural-dwelling families have migrated to this area over the last two to three decades.

In this paper, we report on the eating patterns of indigenous Fijian females at school and their explanations for these patterns. We also discuss how participants' explanations shaped the community-based interventions to promote healthy eating patterns.

## **Methods:**

### **Sample**

Twenty-four males and 24 females from each of the two main cultural groups (indigenous Fijian and Indo-Fijian)

**Table 1: Demographics of Participants**

Demographics	ICF01	ICF03	ICF05	ICF06	ICF09	ICF10	ICF13	ICF23
Age	18	16	17	17	16	18	17	18
Form	6	5	5	5	5	5	5	6
BMI	22.46	22.60	26.89	24.65	30.12	19.33	19.38	22.68

and who attended schools in the Healthy Youth Healthy Community (HYHC) intervention site participated in semi-structured interviews. The interviews aimed to identify the sociocultural basis for adolescents' patterns of eating and physical activity, and body size via participants' descriptions of their everyday lifestyles and their explanations for these. The sub-sample reported in this paper comprised eight indigenous Fijian females aged 16 - 18 years (see Table 1).

### **Data collection**

Approval for the study was gained from the Fiji National Health Research Committee, the Fiji National Research

Ethics Review Committee and Deakin University (Melbourne, Australia). Participants were recruited from four of the seven schools participating in the HYHC study (Assemblies of God High School, Nasinu Secondary School, Rishikul College, Nasinu Muslim College, Amadhiya Muslim College, Bhawani Dayal College and Nakasi High School).

Both participants and guardians provided written consent. The semi-structured interviews were conducted at school by Fijian females using the languages of the participant's choice.

Four of the eight interviews were conducted in Fijian. Interviews lasted 40-50 minutes and were audio-recorded, with participants' permission. Interviews addressed eating, physical activity and body image. The sections of the interview schedule related to eating are appended (see Appendix 1).

The interview records were transcribed and translated into English where appropriate. Transcripts were organised into text units and imported into N6, software for the analysis of qualitative data (QSR International, Melbourne, Australia). Transcripts were coded according to relevant themes before relationships between themes were explored. Findings were analysed collaboratively with the first (indigenous Fijian) and second (European) authors working separately and then together to identify themes and analyse the data in order to capture cultural nuances and enhance cultural validity.

## **The Obesity Prevention in Community Project (OPIC) project aims to identify how experimental community-based intervention programmes in Fiji, Tonga, New Zealand and Australia impact on patterns of eating and physical activity and body size**



## Findings

We report on ideas about healthy foods, and then themes related to eating patterns at school and key influences on participants' food choices. We also include two other themes that we predicted would impact on participants' at-school eating patterns; 1) breakfast because we predicted that skipping breakfast would impact on the food eaten at recess, and 2) the spending money available to each participant because we believed that spending money would influence the purchase of food and drink at school.

### Ideas about healthy and unhealthy foods

All participants accurately identified healthy foods and discussed a balanced diet. For example, when one student (ICF01) was asked how she would change the food in her family, she explained that a balanced diet was: Like eating fruit (and) three different food types.

Several participants referred to the three different food groups that constitute a balanced diet; energy foods (cereals and root crops), body-building foods (proteins) and health foods (fruit and vegetables). Here, "vegetables" refers to green leafy and coloured vegetables. This categorization is congruent with the categories used by the World Health Organisation<sup>14</sup> and the new Pacific Lifestyle guidelines that have been implemented in Fiji.<sup>15</sup>

Some participants talked about unhealthy foods. For example one student (ICF09) explained that she would change her family's diet by:

Eating vegetables more than eating oily foods, because oily foods build more fat in our body.

Many of the participants said that it was important to eat vegetables and described the consumption of local green vegetables such as dalo (a type of taro – *Colocasia esculenta*) leaves and bele (local spinach). As one participant (ICF13) explained:

Most of the time we eat traditional food. Interviewer: Traditional food like what? ICF13: Vegetables, bele, rourou (dalo leaves in coconut milk). We (indigenous Fijians) eat root crops and taro leaves.

Knowledge of a healthy diet did not mean that participants put this into practice, as was evident in the consumption of junk foods during and after school. [this statement might be explained by reference to further data of the paper].

**Several participants referred to the three different food groups that constitute a balanced diet; energy foods (cereals and root crops), body-building foods (proteins) and health foods (fruit and vegetables)**

It is surprising that none of these indigenous Fijians made a mention to the traditional staple foods (taro...) commonly termed as "local food"...see in points made at end... ..

### Eating patterns

#### Breakfast

The most common breakfast was bread, butter, tea, sugar and milk. More than half of the participants missed breakfast one to three times each week. The most common reason that participants gave for missing breakfast was waking up late. However, there was always more than one reason for missing breakfast, including the need to complete chores before going to school, not feeling like eating and rushing to school. For example, one student (ICF03) explained:

If I'm rushing, sometimes I don't have breakfast... After doing the chores, I have my shower and ...rush to school.

This student also woke up late and had a 30-minute walk to school.

Six participants bought snacks (e.g., beans, Indian sweets and "twisties" (cheese snacks) from school canteens during recess time. One participant (ICF09), who ate breakfast every day, said that she did not buy any food at recess and only drank water:

#### Cause I'm a bit fat.

#### Lunch

Five participants always brought lunches from home, which were usually prepared by their mothers. Lunches from home usually consisted of protein (sausages, eggs or fish) and a root crop tavioka (cassava – *Manihot esculenta*) or dalo. Some participants brought sandwiches from home. Only two participants ate fruit and/or vegetables for lunch. However, the majority of participants reported eating a root crop (e.g., tavioka or dalo) and local green vegetables with their evening meal.

The main reason that participants gave for buying lunch at the school canteen was being late in the mornings. One student said that she bought canteen food when her mother was busy. Five participants talked about how they shared food with their friends. More than half of the participants said that they drank water at recess and lunch and three participants said that water was their preferred drinks.

#### Food eaten after school and before dinner

The four participants who bought Indian sweets and other junk food on the way home after school all

received a dollar or more for spending money. Six of the participants had tea and bread when they reached home; this included three of the participants who bought snacks on the way home from school.

### Key influences on at-school eating patterns

#### Spending money

In Fiji, "spending" refers to money that is additional to money provided for lunches and bus fares. Seven participants received spending, ranging from 20-30 cents to three dollars each day. This money was usually used for snacks at recess (5) or on the way home from school (4). One student who received two dollars a day said that she did not buy snacks because she was too fat.

#### Family members

Participants said that their eating patterns were influenced by a range of family members. The most common family influences were parents, then brothers, aunts and grandmother. Messages from family members were often about the amount of food to eat. Three participants were advised by family members to eat less. One participant (ICF23), who believed that her parents were the greatest influence on her eating, explained:

My parents (say).... "You don't have to eat a lot, 'cause you are too fat now. When you grow big your mind will be weak."

Two participants said that family members encouraged them to eat more. One student (ICF13) explained:

(My father) told me to eat lots of vegetables. ..He said "You have to eat and be lively so that you are not skinny like F. (sister)."

This participant also said that her older brother influenced her eating:

My elder brother (says) I have to eat. Don't worry about my figure, just to eat.

It was clear that family members influenced participants' eating patterns at school as well as at home by providing lunches from home and also in more indirect ways. The participant (ICF09) who explained how her mother insisted that she had breakfast every day later said that she did not feel the need to eat at recess because she had sufficient at breakfast time. Parents also had an indirect influence on at-school eating patterns by providing spending money, which was unmonitored and usually used to buy junk food

#### Friends

Friends influenced participants' food choices at school by sharing food and by making comments about the amount of food that others ate. One participant (ICF23) talked about friends discouraging each other from eating a lot:

Aah...they might say that "You don't have to eat a lot. Because you will be becoming fat."

Another participant (ICF06) explained how her friends encouraged her to eat more:

My friend teases me and says I always eat little and need to eat some more.

Friends also influenced each other's eating patterns by sharing food with their friends. One participant (ICF05), who did not bring lunch or food money, appeared to be totally dependent on the food that her friends shared with her:

Interviewer: Is there any reason why you don't have lunch? (no reply).

Interviewer: You get hungry? ICF05:

Yes. Interviewer: What about your friends, what do they bring? ICF05:

Chicken with vegetables. Interviewer: Do you eat with them? ICF05: Yes.

#### School Environment

Finally, the food available at school influenced participants' choice of food and drink. While school canteens provided curry with roti or rice, participants often selected snacks that were high in sugar (e.g., Indian sweets), salt (e.g., beans) and fat (e.g., cheese snacks).

### Summary

These eight indigenous Fijian females had a good understanding of healthy food and drink and a balanced diet that incorporated the three food groups that are promoted in the Pacific (energy, health and body-building). The majority of participants skipped breakfast at least once a week and ate junk food at recess. Most participants usually brought their lunch from home and drank water at school. Most participants said that family members and friends had a key influence on their eating patterns by commenting on serve sizes that they believed were required to achieve an ideal weight. More participants received advice about reducing their serve sizes and losing weight than the reverse. Six of the seven participants who had daily spending money spent this on junk food.

**These eight indigenous Fijian females had a good understanding of healthy food and drink and a balanced diet that incorporated the three food groups that are promoted in the Pacific (energy, health and body-building)**



## Discussion

Participants understood that a balanced diet incorporated the three food groups that are actively promoted by the Fiji National Food and Nutrition committee, namely health, energy and body-building foods. In this paper, we focus on components that are directly related to the community-based interventions related to the Healthy

### Youth Healthy Community (HYHC) interventions.

Other studies have also found that knowledge about a healthy diet did not necessarily lead to healthy eating patterns.<sup>9,16</sup> The at-school eating patterns described by many of these eight participants (skipping breakfast, a diet high in fat and low in fruit and vegetables) [again what do the authors define as vegetables, and are they recognizing the high micronutrient content of the indigenous starchy staples] may increase the risk of obesity.<sup>14,15,17</sup>

Most participants gave more than one reason for missing breakfast and these appeared to be interrelated. That is, participants were rushed because they woke up late and/or had to do chores. We did not ask the participants what time they went to bed. The reported findings suggest that participants would be more likely to have regular breakfasts and prepare lunches at home if they had better time management skills.

In line with the study by Bell and Swinburn (2004), remarkably few participants reported eating fruit or vegetables at school.<sup>9</sup> We did not ask why participants chose to drink water at school. While some participants said they preferred water to other drinks, it is also possible that this choice was economically driven, given that all five participants remarked on the cost of food during their interviews.

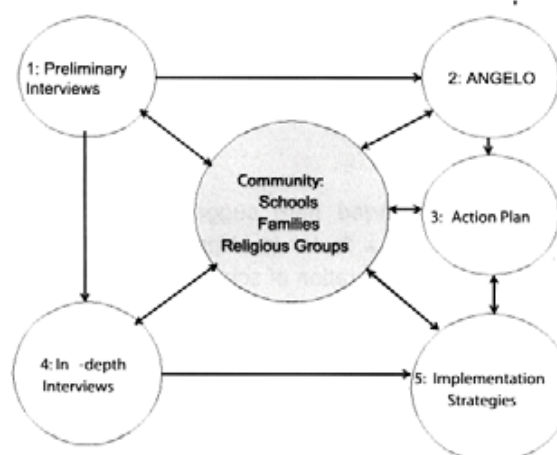
The majority of these eight participants described how family members influenced their eating patterns at home. It was clear that families also influenced at-school food by providing school lunches. Further, the only mother who insisted that her daughter have breakfast every day influenced her daughter's eating at school; this participant said that she did not eat junk at recess because she was not hungry.

Friends influenced at-school eating in two main ways. First, friends commented on the amount of food that participants ate in relation to their body size. Second, the majority of the participants shared recess and lunch food with their friends. This cooperative eating suggests that meals remain important for establishing and sustaining social relationships,<sup>18</sup> especially in Pacific societies where sharing of food is highly valued.<sup>19, 20</sup>

In terms of accessibility, participants indicated that they bought unhealthy foods and drinks from school canteens during school hours, as well as from bakeries and sweet carts on the way home from school. Such ready access to unhealthy food and drinks is likely to challenge the food choices of participants, especially when they are with their peers. Other studies have demonstrated that school children's selection of food at school is based on accessibility, cost, taste, preference and familiarity.<sup>9,12</sup> Several participants indicated that cost was a factor in food selection both at home and at school. It appeared that cost determined choices of canteen food and drink. This appeared to be a significant factor in the purchase of junk food after school; only participants with more than \$1 of spending money bought food on the way home from school.

### Limitations

The findings from this sub-sample of eight indigenous Fijian females should not be generalised, given the small sample. However, preliminary analysis of the larger data set (48 interviews per cultural group) supports the findings reported in this paper. The sample was drawn from a peri-urban area in Suva and findings should not be generalised to other areas in Fiji, including central Suva where adolescents appear to have more ready access to a wide range of fast foods. While the sociocultural factors identified in this paper on at-school diets may also impact on adolescents eating patterns outside school hours, it is important to establish whether other sociocultural factors come into play in family and church



settings when we would expect meal composition to complement the food consumed during school hours. Implications of the findings for the community-based interventions in Fiji

The Healthy Youth Healthy Community (HYHC) project has commenced a three-year programme of community-based interventions that were developed via community consultations with a local steering committee and implementation committees in key settings. The Fiji

interventions have focussed on participating secondary schools and are currently being expanded into other community settings, including church and religious groups.

The findings reported from this sub-sample of indigenous Fijian females, along with the analysis of all 96 interviews with indigenous Fijians and Indo-Fijian adolescents in the study (n=48 per cultural group), have informed the school-based interventions in several ways. The interviews have informed the social marketing and intervention strategies related to food by identifying 1) participants' explanations for their eating patterns, 2) key messengers identified by participants, and 3) ways that these messages were conveyed (see Schultz et al. in this volume). See Figure 1.

Figure 1: Relationship between in-depth interviews and community-based action plan

The Healthy Youth Healthy Community (HYHC) project supports the Fiji National Food and Nutrition Committee's guidelines for healthy eating, while focusing on a ten-point action plan. Specifically the HYHC project supports the consumption of a balanced diet comprising the three food groups. The HYHC action plan includes eating breakfast regularly, increasing the consumption of fruits and vegetables and decreasing fat intake. [again the authors neglect to mention the traditional local foods, which are also micronutrient-rich, for example taro is a rich source of calcium, it almost looks like the program has neglected these foods, which have been the basis for a healthy diet for so many years in the past]

The findings reported here suggest that poor time management was a factor in skipping breakfast and, possibly, in the preparation of school lunches. Students in participating schools and their parents are being taught time-management skills in order to encourage the consumption of regular, healthy meals, including breakfast. Given that most participants said that their mothers prepared their school lunches, it is hoped that improved time management will allow participants to take responsibility for and assist in the preparation of school food.

Most of the eight interviewees indicated that family members and friends were key influences on their eating patterns. These groups are being targeted in the current marketing of the importance of eating regular breakfast, which is likely to influence patterns of eating at school. Families and peers are also being targeted in

the promotion of healthy school food and drink. Students are actively engaged in the implementation committee at each intervention. Students in one intervention school have already begun marketing the need for regular breakfast by conducting surveys, making posters and pamphlets.

These student "champions" talk at school assemblies about the importance of having breakfast, eating fruits and vegetables [again there is no reference here to local foods such as taro which are micronutrient-rich, is this because they do not know about this, or have the authors failed to clearly specify this] and avoiding fatty foods. Students are actively engaged in planning strategies to achieve these goals, such as implementing organised programs like quizzes, essay competitions and poster competitions, with prizes provided by businesses. Programmes of this nature build capacity amongst the adolescents, as well as increasing awareness of the importance of a healthy diet. Given that all eight participants indicated that peers were a key influence on their eating, these student-led initiatives are likely to be a powerful influence on adolescents' patterns of eating at school.

## Conclusion

The OPIC study appears to be one of the first to investigate Fiji adolescents' perspectives on their patterns of eating. The sociocultural component has provided information on eating patterns, adolescents' explanations for these patterns and their perceptions of key factors that influence their diets. It is important to identify the reasons underlying at-school eating patterns in order to plan interventions within school settings. It is crucial to identify whether any of these sociocultural factors are specific to a cultural group or geographical setting in order to ensure that interventions and related strategies are appropriate for the settings at which they are directed. This paper has demonstrated how culturally-specific factors relating to eating patterns and messengers are informing strategies to promote a healthier pattern of at-school eating for adolescents in Fiji. [some mention here to the traditional starchy staple foods, which are also rich in micronutrients and fiber.. would be important.]

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- The OPIC study appears to be one of the first to investigate Fiji adolescents' perspectives on their patterns of eating. The sociocultural component has provided information on eating patterns, adolescents' explanations for these patterns and their perceptions of key factors that influence their diets**
- Appendix 1: Interview schedule relating to patterns of eating at school
1. What time of the day do you have your main/biggest meal?
  2. What do you eat and drink for breakfast?
  3. What do you eat and drink during recess?
  4. What do you eat and drink for lunch?
  5. What do you eat and drink after school and before your evening meal?
  6. What's your favourite food? Why?
  7. What's your favourite drink? Why?
  8. Who influences the amount and type of food that people your age eat? (prompt: mother, father, older brothers/male cousins, older sisters/male cousins, teachers, coaches, church leaders, media). In what way do these people influence people your age? (prompt: role modelling? teasing? rules? encouragement?)
  9. Who influences the amount and type of food that you eat? (prompt: mother, father, older brothers/male cousins, older sisters/male cousins, teachers, coaches, church leaders, media). In what way do these people influence you? (prompt: role modelling? teasing? rules? encouragement?) How does this feel?



Final conclusions: This paper is very relevant to PHD readers and presents valuable information that may be helpful to a number of Pacific Island countries in developing strategies for alleviating the serious chronic disease problems. There are some small editorial changes needed as marked.

However, a major comment is that of the minimal reference to the traditional starchy staple foods of Fijians, namely taro, breadfruit, cassava, cooking banana. As much as 1000 g per day were eaten, and this amount of food provided significant proportions of the micronutrients needed and provided ample fiber, which has been shown now to be important for protecting against diabetes/chronic disease and to provide satiety.

If little mention was made to the traditional staple foods by the respondents on that question about a healthy diet, then this indicates a lack of awareness on the part of the respondents, and thus shows that in fact they do not have a clear idea of a healthy balanced diet. Thus one premise of the paper, that the adolescents were aware of what is a healthy diet, might need to be amended. Also the paper seems to indicate that the authors themselves are more geared to the "western" concept of a healthy diet based on fruits and vegetables as there is little mention in the discussion as to the healthy traditional Fijian diet.

See the papers by Parkinson and Thaman who have eloquently documented that the traditional starchy staple foods have been the basis of a healthy diet in the past (rather than just fruits and vegetables)...

Parkinson, S. (1982) J Food Nutr, 39, 121-125.

Thaman, R. R. (1982) J Food Nutr, 39, 109-121.

The authors might strengthen the paper by including references to these important papers.

It would be important to stress also that the traditional staple foods as taro are more rich in fiber and less energy-dense, compared to rice, so that for purposes of satiety and controlling weight, it would be good to increase consumption of these local foods.

Have the educational institutions stressed more on the importance of eating 'fruits and vegetables' following western type of eating patterns, and neglecting to teach about the values of the "local foods such as taro, breadfruit, cassava". Did the Healthy Youth Healthy Communities put more emphasis on these and neglect the local foods? Or possibly have they included them as "vegetables" but not clearly

specified what this term includes?

As the starchy staple foods are the traditional foods with cultural values, advice on increasing consumption of these foods might have a greater impact than promoting foods which have less cultural value.

**Thirteen years ago PHD, 1994,1(i): p63 said,**

*"Social and emotional factor, for example, the position of a child in the family, quality of interaction of the child with siblings, parents and other caretakers, personal concerns and needs of the parents and child rearing patterns of the parents or the community are also important factors in child development"*