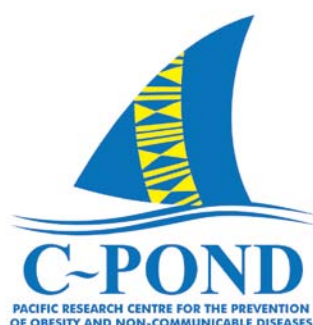


# **‘Junk Food’ Advertising to Children and Adolescents in Fiji.**

## **Report on research undertaken in Fiji in 2010**

*Research undertaken by Silvia Hope under the auspices of C-POND (FNU)*



*In collaboration with La Trobe University, Melbourne, Australia*



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## **Executive Summary**

***Aim:*** The purpose of this research was to provide locally-specific evidence around the exposure, awareness and effect of 'junk food' advertising and promotion to children and adolescents in Fiji and to demonstrate the need to implement legislation to control this advertising and promotion. This report has been prepared to support the proposed legislation on junk-food advertising to children in Fiji which is in the planning stages within the Ministry of Health.

***Background:*** Numerous studies have found weight gain in children to be associated with exposure to food and beverage advertising. Obesity and other non-communicable diseases are now the leading cause of death in Fiji and obesity rates are rising at an alarming rate. As a result, there is a need to protect children from targeted promotion of unhealthy food, and to create an environment that is supportive of a healthy lifestyle and diet in children and adolescents.

***Methods:*** This research incorporated four sub-studies, assessment of: (1) the effect of advertising on a small sample of children in terms of their food preferences, nutritional knowledge and advert recall ability, (2) the level of advertising on two key TV stations, (3) the level of street advertising and (4) sponsorship of events. A total of 88 primary school students and 103 secondary school students from schools in Suva, Fiji, completed a self administered questionnaire to ascertain their media consumption habits, product recall ability, the influences on their food preferences, and nutritional understanding. Also assessed was the extent of 'junk food' advertising on Fiji's two free-to-air television channels on two weekdays and two weekend days, the level of street advertisements in three defined localities, and the level of events sponsored by 'junk food' products over a twelve month period.

***Findings:*** The findings from this research demonstrate that children and adolescents in Fiji are heavily exposed to 'junk food' advertisements and promotions, with high-levels found on the television and the participants who were questioned having high recall of advertisements. Participants were found to take notice of these adverts and reported that they were affected by them in terms of their food preferences and nutrition knowledge. Street advertising was also found to be high, and multiple events were identified that were sponsored by 'junk

*foods'. Overall, the findings indicate that 'junk food' advertisement and sponsorship in Fiji is similar to that found elsewhere in the world, highlighting the need for a regulatory approach to limit this problem, which in line with global recommendations.*

***Practical Implications:*** *This research adds substantially to the small amount of existing evidence around 'junk food' advertising and its effects specific to Fiji. As Fiji now faces serious issues in the area of overweight and obesity, this research can be useful in supporting the development and implementation of regulations. Specifically, given this evidence, it is recommended that that the Fijian Government implement legislation that is in line with Consumers International & International Obesity Taskforce's (CIIOT, 2008) proposed 'International Code on Marketing Food and Non-Alcoholic Beverages to Children'. The development of legislation is in line with the World Health Organisation's recommendation that its member states take a policy approach to ensure children are protected against such marketing (WHO, 2010).*

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Finally, I would like to acknowledge Susana Lolohea and Astika Prasad for their assistance in this research.

## **2. Introduction**

The growing epidemic of childhood obesity is a major public health concern around the world resulting in a dramatically increasing global burden of non-communicable diseases (NCDs). Numerous studies have found weight gain in children to be associated with television viewing with results showing increased consumption of specific foods in response to advertising. While multiple factors influence the eating behaviours and food choices of children and adolescents, advertising of nutrient-poor, high-energy foods and beverages ('junk food') has been found to be a potent force with numerous studies finding food advertisements to affect children's food choices, preferences, attitudes and nutritional knowledge (Storey & French, 2004). In this research, 'junk food' products are defined by the FSANZ (2007) Nutrient Profiling Calculator, which identifies healthier and unhealthy (termed 'junk food' in this report) products.

Obesity is now the leading cause of death in Fiji, with overweight and obesity rates continuing to increase dramatically. Fiji's alarming obesity figures (Cornelius et al, 2002; WHO, 2003) and worrying rates in children highlight the need to protect children from influential promotion of unhealthy food (Utter et al, 2008). There is a need to create an

environment that is supportive of encouraging children to live a healthy lifestyle and develop healthy nutritional habits from a young age (McGinnis, Gootman & Kraak, 2006).

Agreement was reached at the 16<sup>th</sup> World Health Assembly in 2007 for the World Health Organisation (WHO) to ‘develop a set of recommendations on marketing of foods and non-alcoholic beverages to children’ as part of a global strategy to prevent NCDs (WHO, 2008). Consumers International and the International Obesity Taskforce (2008) have developed a set of proposed recommendations on which recommendations from this research will be based.

The primary aim of this project was to provide evidence to demonstrate the scale of advertising and sponsorship in Fiji, which will support legislation on ‘junk food’ advertising and sponsorship in Fiji. Specifically, this study aims to investigate the level of ‘junk food’ television advertising, street advertising and sponsorship of events in Fiji. It also aims to provide evidence that children and adolescents in Fiji are aware of and are affected by this advertising through alterations in their food preferences or influencing their requests for purchasing of specific products. The evidence produced can indicate the scale of the problem in Fiji, and may be used to support proposed legislation on junk-food advertising to children and adolescents in Fiji.

### **3. Background and Literature Review**

Due to the significant rise of overweight and obesity among young people worldwide, the issue of advertising ‘junk food’ has generated increasing amounts of public discussion and debate (Hawkes, 2007).

The rise of diet-related diseases, including diabetes, heart disease and some cancers has resulted from an increase in the intake of foods high in sugar, fat and salt, combined with a reduction in levels of physical activity. These largely preventable diseases have significant costs in terms of their impact on individual lives, communities and health services. Children who are obese are much more likely to be obese adults and have significantly higher risks of suffering from long-term health problems later in life (Kumar, 2008).

Evidence shows that overweight and obesity in both children and adults are becoming increasingly significant public health issues in the developing world (Neill, 2007). Children

in Fiji are growing up in an environment which is obesogenic; processed imported 'junk food' are highly available and accessible, and traditional root crops and other local food products are more difficult to access (Kumar, 2008). A recent review by Hastings et al (2006) found reason to believe that children in developing countries are more intrigued and influenced by advertisements than children in developed countries. Children in developing countries have been found to enjoy viewing food advertising and are then interested in trying the advertised foods. They have also been found to be less likely to have a sophisticated understanding of the modern techniques used in advertising.

In recent years, food and beverage industries around the world have begun to view children and adolescents as a major market force. Children and adolescents are now the target of intense and specialized food marketing efforts. Food has been found to be the most commonly advertised product on children's television around the world (Storey & French, 2004). Food marketers are interested in youth as consumers because of their strong influence on household food purchases, their purchasing power, and as future adult consumers (Story & French, 2004). There is strong evidence to suggest that steering children away from commercial television may be effective in reducing childhood obesity (University of California, 2010). Consumption choices of children have been found to be dependent on the advertisements they see (Hastings et al., 2006; Story, Neumark-Sztainer & French, 2002), indicating that 'junk food' adverts are likely to contribute to unhealthy diets and that they may contribute to adverse health outcomes and risks (McGinnis et al, 2006). The marketing of 'junk food' ultimately undermines the efforts of governments and parents to promote healthy eating (The National Obesity Taskforce, 2007).

These issues are gaining increasing amounts of attention as obesity rates in Fiji are rising at an alarming rate, with obesity-related diseases now the leading causes of death in Fiji. Around 60% of all deaths are due to heart disease, heart failure, stroke and hypertension and NCDs have been recognised as important health problems (Ministry of Health, 2004). In a recent study Fiji ranked tenth in the world for the highest DALY losses per 100,000 for stroke (Johnston, Mendis & Mathers, 2009). The last national survey (Cornelius et al 2002) found obesity rates of 10% in adult males and in females 26%. There were large differences between the two main ethnic groups, with 11% of Fijian men obese, compared to just 6% of Indo-Fijian men. The picture was similar in women, with 32% of Fijian women obese, but only 16% of Indo-Fijian women.

The increase in the prevalence of obesity has been found to be correlated in part to an increase in time spent watching television (Robinson, 1998). Several reviews have found weight gain in children to be associated with television viewing as a result of reduced energy expenditure due to inactivity, as well as an increase in consumption of food in response to food advertising (Andersen et al., 1998; Ebbeling, Pawlak & Ludwig, 2002; Robinson, 1998). Further evidence suggests that advertising is a driving contributor to childhood obesity, as non-commercial viewing, such as watching DVDs, has been found to have no significant association with obesity (University of California, 2010). While obesity has many drivers, controls on marketing consistently rate as a high priority strategy for addressing childhood obesity. Protecting young people from commercial exploitation is now being described as a societal responsibility (The National Obesity Taskforce, 2007).

There has been little research into children's exposure to advertisements through other mediums of advertising in Fiji including street advertisements, give-aways, competitions, promotional fundraisers and sponsorship of events. Awareness of the use by 'junk food' companies of other advertising and marketing mediums to children has been found to be low in developed countries such as Australia where only 28% of children and parents mentioned this as a method of 'junk food' advertising. These subtle advertising methods can have similar persuasive effects on children's food preferences as advertising on TV (Morley, 2007).

The Global Strategy on Diet, Physical Activity and Health (World Health Organisation, 2004) recognised that the global burden of NCDs has rapidly increased and that unhealthy diets are the leading causes of cardiovascular disease, type 2 diabetes and certain cancers. This Global Strategy also recognises that the burden of disease attributable to NCDs is currently greatest in developing countries and is continuing to grow. It recognises that governments have a central role in creating an environment that encourages healthy behaviours; highlighting the role of advertising, sponsorship and promotion of food. This recognition was reiterated in 2010 with the release of the WHO's 'Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children' which recommends that all its member states develop multisectoral approaches to ensure children are protected against the marketing of 'junk food' (WHO, 2010).

Current global evidence for action shows that there is extensive food and beverage promotion to children, that children are aware of and engage with this promotion, that the large majority

of this food promotion is for energy-dense, nutrient poor foods that undermine recommendations for a healthy diet and that food promotion has a damaging effect on children's food knowledge, attitudes, purchase behaviour and consumption (Consumers International & International Obesity Taskforce, 2008).

The Proposed International Code on Marketing of Foods and Non-Alcoholic Beverages to Children recommends that there should be 'no marketing to children of energy-dense, nutrient poor foods that are high in fat, sugar or salt and brands associated with such foods'. It proposes that food categories be defined by nutrient profiling. According to this code, restrictions should be placed on all broadcast marketing of 'junk food' between the hours of 06:00 and 21:00. For non-broadcast marketing it should be considered whether children are potential recipients of the promotion in significant numbers regardless of the target audience (Consumers International & International Obesity Taskforce, 2008).

#### **4. Methods**

This section provides an overview of the methods used to investigate the different components of this study.

##### **4.1 Questionnaire:**

In order to assess children's understanding and awareness of advertising and promotion, a self-completed questionnaire was developed. This was used in preference to other techniques as it was felt to be less intrusive on the school day, and could be easily administered across a large number of students, in the short period of the time that the researcher was able to be in Fiji. The questionnaire was designed to investigate participant's media consumption habits, product recall ability, the influences on their food preferences, and nutritional understanding. A web search was conducted for questionnaires used elsewhere and this information was used to inform the process.

The aim was to obtain responses from 100 primary school students and 100 secondary school students from schools with a mix of Indigenous Fijian and Indo-Fijian students in Suva, Fiji. This was deemed to be a sufficient number to be able to identify patterns and was also feasible in the time available to the researcher. A copy of the questionnaire can be found in Appendix 1. The questionnaire was developed based on the types of questions asked in other

similar surveys, and comments were received on a draft from a number of relevant academics and local staff.

**Selection Methods:** Convenience sampling was used to select the schools and students. The participating schools were selected by the Fiji Ministry of Education, following a request from the researcher for two schools within Suva with an ethnic mix. This was facilitated by the National Food and Nutrition Centre. Participants were then identified by the principals of each school, by class.

**Contact Methods:** ‘Participant Information Sheets’ and consent/withdrawal forms were distributed to students, by their teachers, to take home to their parents. Questionnaires were distributed and completed during class time.

**Ethics and Privacy:** Ethics clearance for this research was received from the La Trobe University Ethics Committee as well as from the Fiji National Ethics Review Committee and can be found in Appendix 4. Questionnaires were anonymous and teachers were instructed not to look at the student’s answers. Teachers at Indian College were provided with an envelope and instructed to collect completed questionnaires, place them into the envelope and seal. The completed questionnaires and consent forms were then collected by the researcher. Questionnaires from Samabula Primary School were collected by the researcher directly from the participants, as this alternative approach was requested by the Principal. It was made clear to the students and their parents that participation in the questionnaire was voluntary; as participants were under 18 years of age, only students who returned a signed consent form from a parent or guardian participated in the research.

Consent forms from all participants have been retained in Fiji and will be kept for five years.

**Data Analysis:** Data from the questionnaires was entered into a database using the EpiData program. A combination of EpiData and Microsoft Excel were used in the analysis. Comparisons were made in the analysis comparing results obtained from the primary and secondary school. Statistical significance was determined using a Chi Squared test. No verification was used to ensure that data had been coded and entered correctly. The researcher undertook all of these tasks alone.

All products identified by the participants were classified as either ‘junk food’ or ‘healthy’ according to the Food Standard Australia and New Zealand (FSANZ) (2007) Nutrient

Profiling Calculator. It should be clarified here that the Nutrient Profiling Calculator provides a points system to identify foods ‘eligible to make health claims’. In this report, using this system, all foods and beverage products that failed to satisfy eligibility criteria to make health claims have been classified as ‘junk food’. All food and beverage products that satisfy the eligibility criteria to make health claims have been classified as ‘healthy’.

Participants were asked in the questionnaire to indicate the hours of television they usually watch on a school days and weekend days. Responses to this question were gathered through a multiple choice question. Multiple choice responses were coded in order calculate participant’s average television exposure time. This coding method is outlined in Appendix 2, Table 1.

#### **4.2 Review of Television Advertisements:**

In order to assess the level of ‘junk food’ advertising on television in Fiji, a review was undertaken of the two free-to-air channels: Fiji1 and Mai TV. Paid television channels (satellite) were not assessed as it was identified that the satellite channels were less accessible in Fiji due to costs, and also that the advertising on satellite channels were mostly not locally generated.

These two terrestrial channels were recorded from 6am to 9pm over two week days and two weekend days. With no standard method for this type of investigation, the method was adapted from a similar study conducted in Australia which also focused on free-to-air channels and was recorded between 7am to 9pm over 2 weekdays and 2 weekend days (Chapman et al, 2006). The Proposed Recommendations for an International Code on Marketing of Foods and Non-Alcoholic Beverages to Children recommends that broadcast marketing is banned from 6am until 9pm (Consumers International & International Obesity Taskforce, 2008), therefore it was these hours which were recorded and analysed for this project.

All food products advertised were classified as either ‘junk food’ or ‘healthy’ according to the FSANZ (2007) Nutrient Profiling Calculator. This Nutrient Profiling Calculator was used as it has been identified locally as a likely system to be used within developing legislation in Fiji (Snowdon, 2010). It was also found to be easily accessible and to have a clear system.

For advertisements for products that fell into the ‘junk food’ category, it was noted where the adverts made reference to that product being “healthy” or put out an impression which could be easily misinterpreted.

The review of advertisements included all adverts for products and events. Advertisements for television programs and infomercials were excluded from the analysis.

#### **4.3 Review of Street Advertisements:**

In order to assess the level of ‘junk food’ advertisements on Fiji’s streets, a review was undertaken looking at the number of street advertisements for ‘junk food’ in specific locations. Some consideration was needed in regards to which areas to assess, as it was not possible to undertake this throughout Suva or Fiji.

The number of advertisements along Suva city’s main road (1.4km) were tallied as well as all street advertisements within an 805m radius around the participating primary and secondary schools. This was done by driving around the streets using a GPS to ensure all roads were included. All street advertisements for food and beverages were photographed and later classified and tallied. Street advertisements were classified into four categories; Sponsored Store Signs, Posters, Bill Boards and “Sponsored Other”. Details around each category are explained in Appendix 2, Table 2.

An 805m radius (1/2 mile) has been frequently cited as walking distance to and from school in studies of transportation (CDCP, 2002; DiGuseppi, Roberts & Allen, 1998). In addition, an 805m radius from a central point has been commonly used to characterise environmental contributors to health behaviours, including cigarette smoking (Chuang, Cubbin, Ahn & Winkleby, 2005), alcohol use (Pollack, Cubbin, Ahn & Winkleby, 2005), and exercise (Kirtland et al., 2003). The 1.4km main road was also analysed as this is an area where people often visit, therefore repeated exposure of adverts is likely to be achieved.

#### **4.4 Review of Sponsored Events:**

An internet search was undertaken for references to events in Suva or on television which took place within one year of the investigation that were sponsored by food or beverage products. All events which targeted children or where significant numbers of children and adolescents are likely to attend or watch were quantified. While this was not a systematic search, it was intended to identify whether any examples of this type of sponsorship could be

found locally, and hence whether evidence exists that there is a need for regulation around such events.

## 5. Results

The self administered questionnaire was completed by a total of 191 students. There were 88 participants from the primary school aged 11-13 years and 103 students aged between 14 and 18 years from the secondary school. Both schools had a mix of participants of Indigenous Fijian and Indo-Fijian ethnicities. The results are presented by topic: exposure, awareness and effect.

### 5.1 Exposure:

#### 5.1.1 Exposure to TV Advertisements

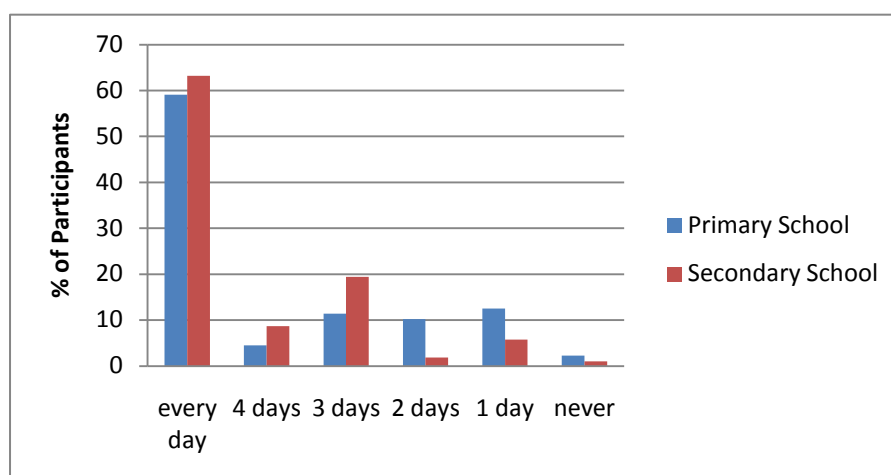
Results overall showed strong evidence of participant's exposure to television 'junk food' advertisements.

#### *Results from Questionnaire*

All students participating in the survey (n=191) had access to a television to watch.

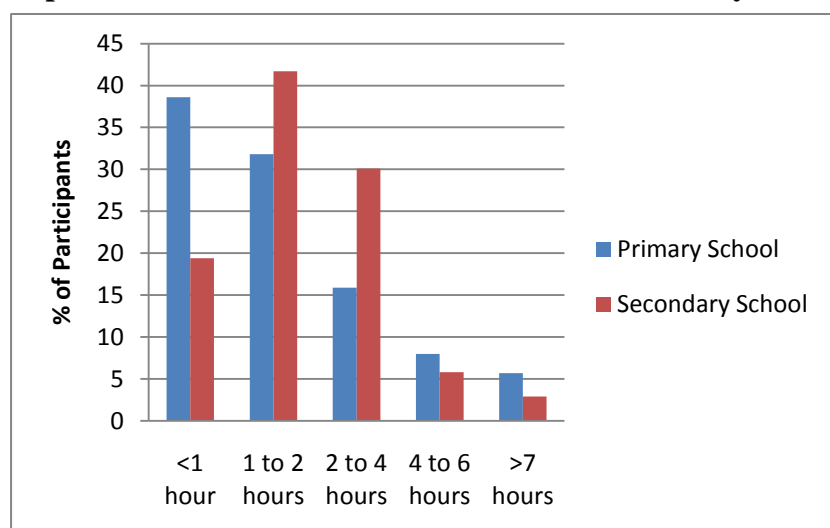
Only a small number of primary (n=1/88) and secondary students (n = 2/103) indicated that they did not watch television at all during the school week. The majority of both primary (52/88 = 59.1%) and secondary school participants (65/103 = 63.1%) reported that they were watching television (either paid, free-to-air or DVDs) every day of the school week (Monday to Friday). This is shown in Graph 1. The secondary school participants were statistically more likely (P=0.03) to watch television on more days of the week than the primary school participants.

**Graph 1: Days Television Watched During the School Week (Monday-Friday).**



As indicated in Graph 2, the highest incidence of participants ( $71/191 = 37.2\%$ ) reported watching between 1 to 2 hours most week days. Secondary school participants indicated that they watch television longer (between 2-4 hours) than primary school participants ( $P=0.012$ ). Using coding method explained in the ‘Methods’ section, primary school participants reported to watch an average of 1.8 hours per school day while secondary school participants reported to watch an average of 2.1 hours per school day.

**Graph 2: Hours of Television Watched on a School Day**

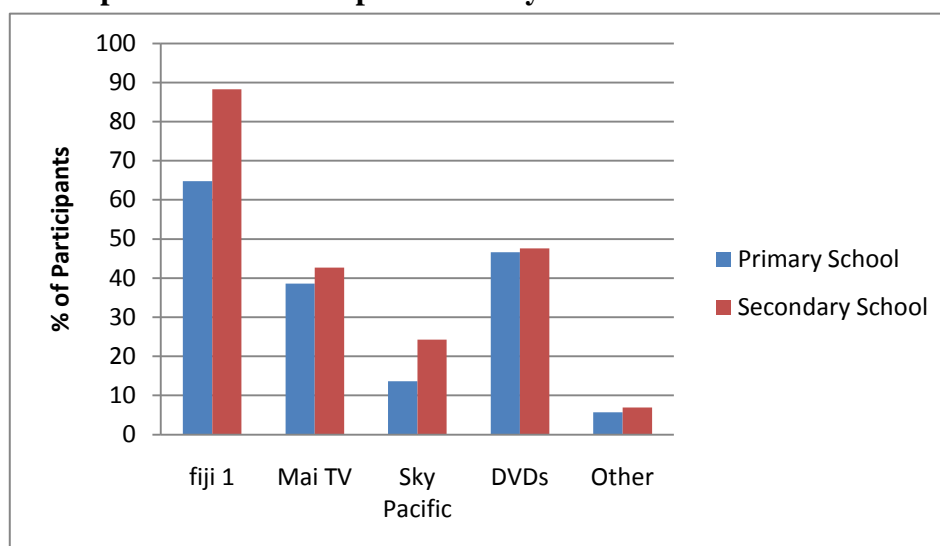


Participants also reported watching more hours of television per day during the weekend, indicating an average viewing time over both weekend days of 7.1 hours. The average length that television was watched on a Saturday was 4 hours for primary school participants and 4.3 for secondary school participants, however the difference between the two schools was not found to be statistically significant ( $P=0.68$ ).

Less television was watched on a Sunday, primary school participants watched an average of 2.8 hours on a Sunday. Secondary school participants watched television for an average time of 3.1 hours on a Sunday. This difference between primary and secondary school students was again not statistically significant ( $P=0.45$ ).

The assessment of content usually watched on television, is shown in Graph 3. While the vast majority of participants watched the free-to-air channel Fiji1, more participants from the secondary school were found to watch this channel (88.8%; n=91/103) compared to the primary school children (68.4%; n=57/88). This difference was found to be statistically significant (P=0.0001). A substantial number of participants also claimed to watch the free-to-air channel Mai TV with 38.6% of primary school participants and 42.7% of secondary school participants reporting that they watched this channel. There was no significant difference found between the participants of the two schools in regards to the quantity who watch Mai TV (P=0.56).

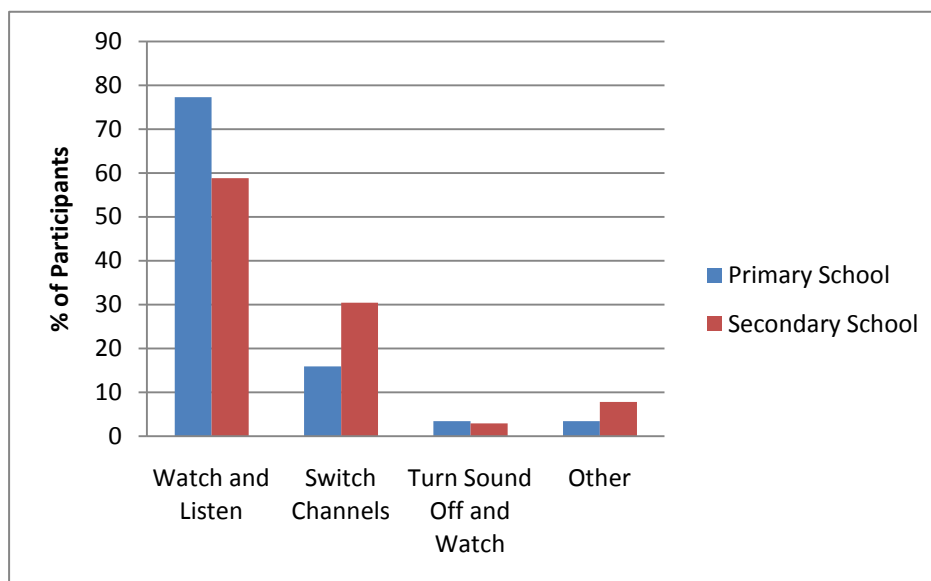
**Graph 3: What Participants Usually Watch on Television.**



Using the same coding method outlined in the ‘Methods’ section, it was estimated that of the total amount of television watched during the week (Monday to Friday), an average of 71.1% consisted of Mai TV and Fiji1 (Fiji’s free-to-air channels). An average of 86.9% of television watched during the weekend consisted of Mai TV and Fiji. There was no significant difference between the amount of free-to-air TV watched between the two schools (P=0.37).

It was also investigated whether participants notice what adverts were being shown. Results indicate that the majority of participants pay attention to adverts by indicating that they “watch and listen” as opposed to switching channels, or muting the sound. As indicated in Graph 4, primary school participants are more likely to pay attention to adverts (RR=1.32) than their older counterparts with 77.3% (n=68/88) of primary school participants indicating that they “watch and listen” compared with 58.8% (n=60/103) of secondary school participants.

**Graph 4: What Participants do when Adverts are Shown on Television.**



***Results from Assessment of Television Advertisements***

From the review of advertisements on Fiji’s two free-to-air channels, of the total advertisements for food and beverages, it was found that 87.5% shown on Fiji 1 and 90% shown on Mai TV fell into the ‘junk food’ category. The food and beverage products advertised on the assessed days and their classifications can be viewed in Appendix 2, Table 4.

From the review of ‘junk food’ advertisements shown on Fiji1; an average of 20.5 ‘junk food’ advertisements were found to be shown on each of the two week days assessed. The total ‘junk food’ advertisement duration was 10.3 minutes each week day. There were no ‘junk food’ advertisements shown during school hours, with all ‘junk food’ adverts shown between 5:30pm and 9pm. During this time the quantity of ‘junk food’ advertisements made up 23.8% of the quantity of total adverts.

During the weekend, an average of 16.5 ‘junk food’ advertisements were found to be shown on each of the two weekend days assessed. The total ‘junk food’ advertisement duration was an average of 8.25 minutes each weekend day. The majority (85%) of ‘junk food’ adverts were also shown between 5:30 and 9pm. The quantity of ‘junk food’ adverts made up a total of 14.5% of the total quantity of adverts during the weekend.

The review of Fiji’s other free-to air channel Mai TV revealed that this channel shows significantly fewer ‘junk food’ adverts than Fiji1. An average of 8 ‘junk food’ advertisements were found to be shown on each of the two week days assessed. The total ‘junk food’ advertisement duration was an average of 4 minutes each week day. There were no ‘junk food’ advertisements shown during school hours, with all ‘junk food’ adverts again shown between 5:30pm and 9pm. During this time, the quantity of ‘junk food’ advertisements made up 13% of total adverts on Mai TV.

During the weekend, Mai TV showed an average of 4 ‘junk food’ adverts per day, making the total ‘junk food’ advert duration an average of 2 minutes each weekend day. The quantity of ‘junk food’ adverts made up a total of 6% of all adverts shown on Mai TV during the weekend.

A number of ‘junk food’ products advertised could easily be misinterpreted as a ‘healthy’ product due to misleading messages in the adverts. Examples include products, such as Powerade, which was found to be promoted with an association with being good at sport, Chicken Sausages and Corned Beef were promoted as part of a ‘healthy’ family meal and Milo was promoted as being “nutritious” (and none of these products passed the chosen calculator).

Using the estimation method for calculating average television exposure times outlined in the Methods section of this report, participants who usually watch Fiji1 were estimated to be exposed to an average of 5.2 ‘junk food’ adverts each week day and 3.4 each weekend day. Participants who usually watch Mai TV were found to be exposed to substantially fewer ‘junk food’ adverts, with an average exposure of 1.1 ‘junk food’ adverts each week day and 0.9 each weekend day.

The secondary school participants are estimated to be exposed to a total of 1344 television ‘junk food’ adverts each year, creating a total exposure time of 11.2 hours. Primary school students are estimated to be exposed to a total of 1116 television ‘junk food’ adverts per year,

creating a total exposure time of 9.3 hours. The calculation for this estimation can be viewed in Appendix 3.

### **5.1.2 Exposure to Street Advertisements.**

A classification system was developed for assessing the street adverts, this can be viewed in Appendix 2, Table 2. A total of 56 street advertisements for ‘junk food’ were found along Suva’s main road (Victoria Parade and Scott Street, 1.4km). These advertisements consisted of 12 sponsored store signs, 33 posters, 5 billboards and 6 “sponsored other”.

Within an 805 metre radius of Samabula Primary School, a total of 67 street advertisements for ‘junk food’ were found. The 67 street advertisements consisted of 19 sponsored store signs, 47 posters and 1 “sponsored other”.

Within an 805 metre radius of Indian College, a total of 59 street advertisements for ‘junk food’ were found. This consisted of 17 sponsored store signs, 35 posters, 3 billboards and 3 “sponsored other”.

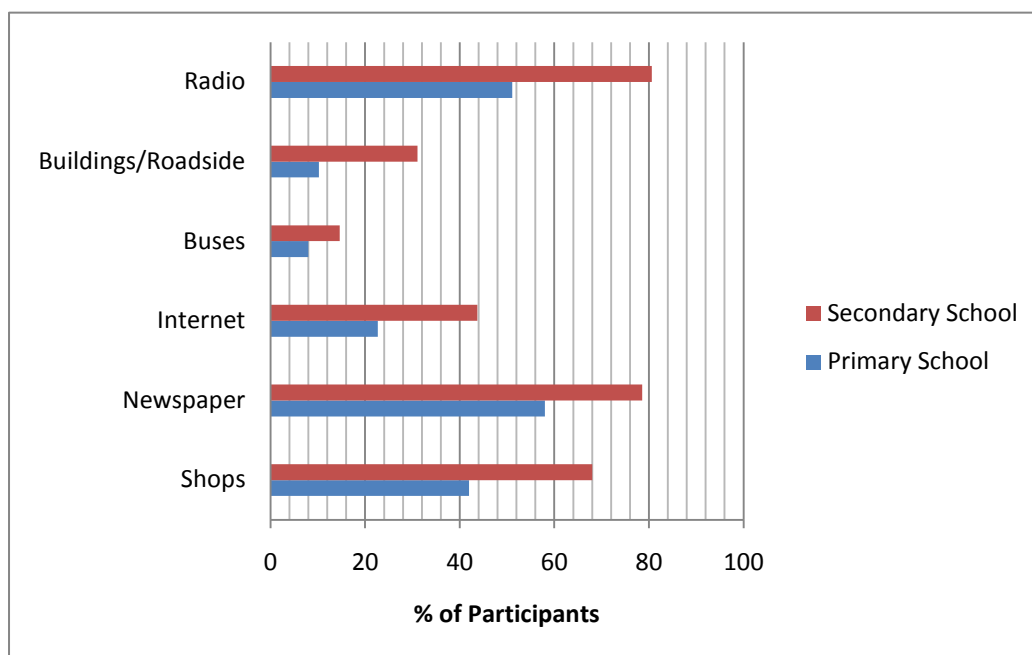
### **5.1.3 Exposure to Sponsored Events.**

From the web search for references to sponsored events, supplemented by the events identified by survey participants, a total of 14 events sponsored by ‘junk food’ products were found to have taken place within one year of the investigation. This list may be incomplete as events may have been small and unlisted on the internet. There are also likely to be events supported by industries such as prizes of food and beverages donated by companies. These results do however provide an idea of the type and extent of ‘junk food’ sponsored events which are likely to involve or capture the attention of children and adolescents. The results of this investigation can be found in Appendix 2, Table 2.

## **5.2 Awareness:**

Participant’s awareness of advertisements was also assessed. Participants were asked to tick boxes to indicate where they had seen or heard food or beverage advertisements. As shown in Graph 5, more secondary school participants were aware of each different advertising medium than primary school participants. A test of statistical significance was undertaken for each advertising medium using a Chi Squared test. The difference between the awareness of adverts through each medium by primary and secondary school participants was found to be statistically significant for all mediums ( $p < 0.05$ ) except for buses ( $p = 0.15$ ).

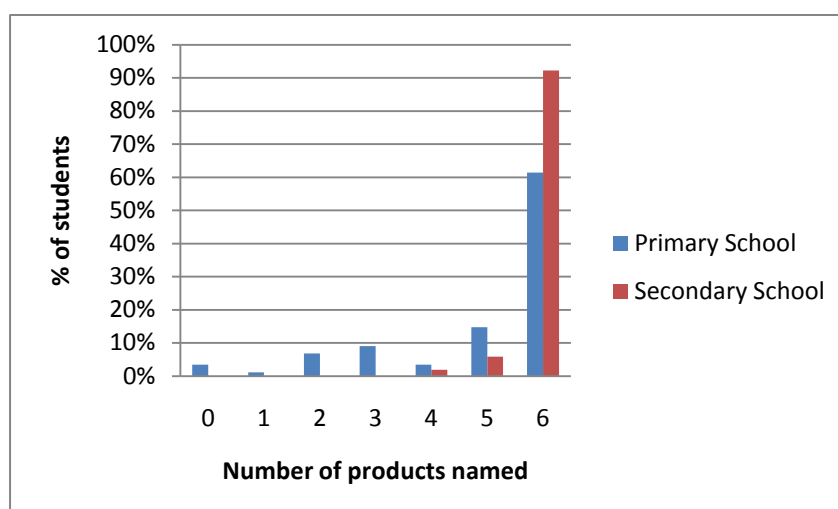
**Graph 5: Where Participants have Seen or Heard Food and Beverages Advertised.**



In order to assess whether participants were remembering advertising messages, and so being affected by them, participant's product recollection was investigated. Participants were asked to name three food products and three beverage products they had seen advertised. As displayed below in Graph 6, the majority of students from both schools were able to name three food products and three beverage products they had seen advertised. A higher proportion of secondary school participants (95/103=92%) were able to name six products compared with only 61% (n=54/88) primary school participants ( $P < 0.05$ ).

No association was found between the amount of television watched by participants and their ability to recall products they had seen advertised as the majority of participants were able to answer this question.

**Graph 6: Number of Advertised Products Named by Participants.**

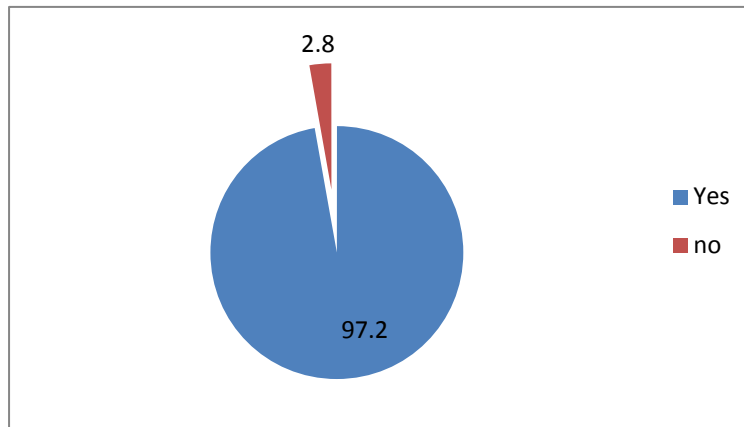


Of the total products named by participants, 85% (n=886/1046) of the products fell into the ‘junk food’ classification category (78% (n=396/507) of food products and 91% (n=490/539) of beverage products named fell into this category). There was no significant difference between the proportions of junk products and healthy products named by participants of each school ( $P>0.05$ ).

Awareness of advertising was also assessed by investigating whether participants could name a sports event sponsored by a food or beverage product. Results demonstrate that the majority of participants were aware of, and could name numerous sports events sponsored by food and beverage products. 87.5% (n=77/88) of primary school participants were able to name a sports event sponsored by a food or beverage product, this is significantly fewer ( $p=0.01$ ) than secondary school participants in which 97.1% (n=100/103) of children were able to name a sponsored sports event.

Of the total sports events named by participants (see Appendix 2, Table 3), 97.2% of these sponsorships were by ‘junk food’ products.

**Graph 7: Was the Named Sports Event Sponsored by a ‘Junk Food’ Product?**

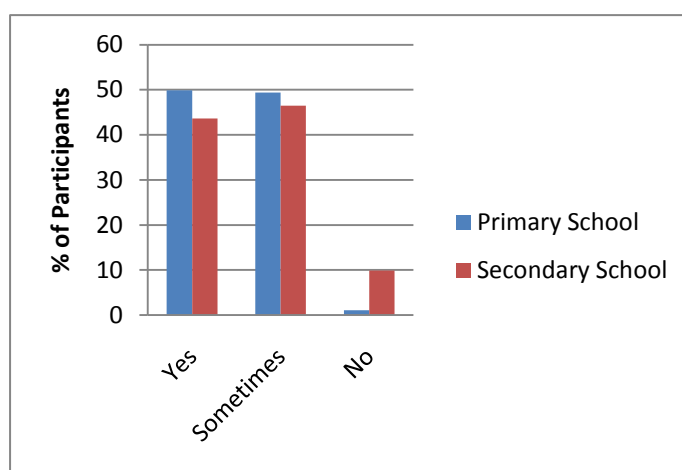


**5.3 Effect:**

This project also aimed to investigate whether participants identified any effect of the ‘junk food’ advertisements on them. The questionnaires included an assessment of whether seeing advertisements influenced participants to try the advertised product. Participants were asked using a Likart Scale to indicate whether seeing adverts makes them want to try the products being advertised. Participants were giving the option to respond by indicating “yes”, “no”, or “sometimes”. 1.1% (n=1/87) of primary school participants and 9.9% (n=10/103) or

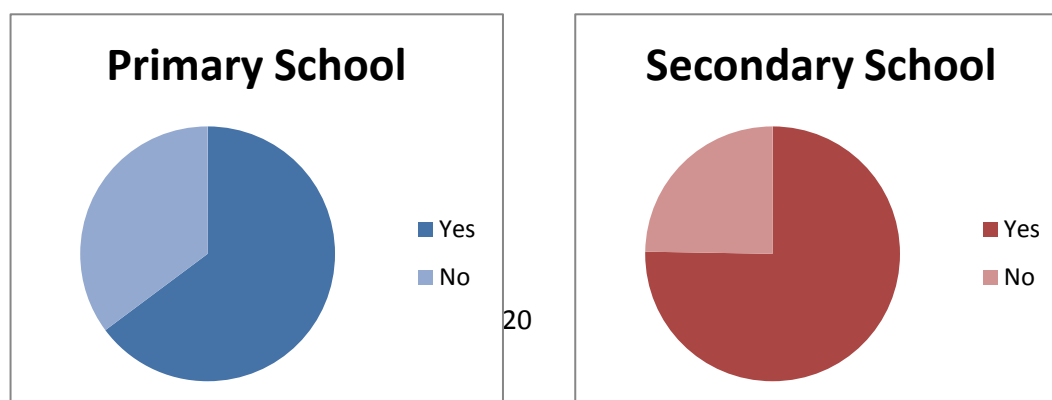
secondary school participants indicated that they did not want to try products they had seen advertised. As shown below in Graph 8, the remainder of children indicated “yes” or “sometimes”, with very similar proportions of participants indicating each response. Overall, primary school participants were found to be more likely to want to try products they had seen advertised. This difference in responses between the two schools was found to be statistically significant ( $p=0.03$ ).

**Graph 8: Did Seeing Adverts Make Participants Want to Try Advertised Products?**



It was also assessed whether advertisements prompted participants to attempt to influence others to buy products for them that they had seen advertised. Participants were asked whether, after seeing an advert, they had ever asked someone to buy the advertised food or beverage for them. Results show that the majority of participants had asked someone to buy products for them after seeing the product advertised with 64.8% ( $n= 57/88$ ) of primary school participants and 75.5% ( $n=77/102$ ) of secondary school participants answering “yes” to this question. The difference between the behaviour of participants at each school was not found to be statistically significant ( $p=0.1$ ).

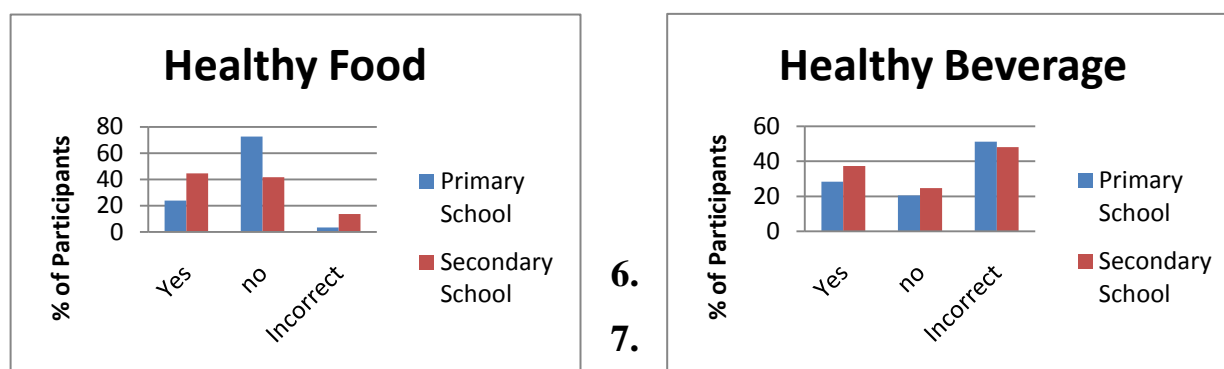
**Graph 9: After Seeing Advertisements Have Participants Ever Asked Someone to Buy the Advertised Foods/Drinks for Them?**



Participants were also asked to name a healthy food and healthy beverage they had seen advertised. A higher proportion of secondary school participants were able to name a healthy food product than those from the primary school. A Chi Squared test found this difference to be statistically significant ( $P=0.0001$ ). Only 23.9% of primary school participants ( $n=21/88$ ) were able to correctly name a healthy food product, whereas 44.7% ( $n=46/103$ ) of secondary school were able to name a healthy food product. Approximately 9% ( $n=17/191$ ) of participants incorrectly identified a ‘junk food’ product as healthy.

A higher proportion of secondary school participants were also able to correctly name a healthy beverage product they had seen advertised than primary school participants. However this difference was not found to be statistically significant ( $P=0.45$ ). Only 28.4% ( $n=25/88$ ) of primary school participants and 37.3% ( $n=38/102$ ) of secondary school participants could correctly name a healthy beverage product. Approximately half of the students at both schools incorrectly named a beverage they thought was healthy. 51.1% ( $n=45/88$ ) of primary school participants answered this question incorrectly with secondary school participants displaying similar knowledge with 48% ( $n=49/102$ ) answering this question incorrectly.

**Graph 10: Can Participants Name a Healthy Food and Healthy Drink Product they have Seen Advertised?**



## 6. Discussion

### 6.1 Television Advertisements:

Consistent with previous finding in urban areas in Fiji (Utter et al, 2008), all participants were found to have access to a television to watch, with a large majority reporting that they watched television every day. This finding is likely to be relevant to urban areas only, with access to television likely to be significantly lower in other areas of Fiji.

The majority of participants indicated that they watch between 1 and 2 hours of television each week day. Overall, participants in the selected secondary school were found to watch more hours of television each weekday than those in the selected primary school.

On average, participants were found to watch 2 hours of television each school day, 4 hours on a Saturday and 3 hours on a Sunday. This works out to be a total average of 17 hours of television time per week. This is consistent with studies undertaken in New Zealand and Australia which found children to watch an average of 2.5 hour of television per day with increased watching during the weekend (Hancox, Milne & Poulton, 2005; Nielsen, 2001).

It was indicated by participants that, on average, just over 70% of their television exposure consists the free-to-air channels Fiji1 and Mai TV. This is comparable to other studies, which estimate that 82% of viewing time consists of non-pay television (Nielsen, 2001).

Participants who mainly watch Fiji 1 were estimated to be exposed to an average of 5.2 'junk food' adverts each week day. This is based on an average free-to-air television exposure time of 1.4 hours per day. This volume of 'junk food' advert exposure is comparable to a study undertaken in Australia where children were found to watch 2.5 hours of television per day and exposed to 9 'junk food' advertisements (Neville et. al, 2005).

'Junk food' advertisements were found to be predominantly shown in times that children are likely to be watching television (5:30-9:00pm). Results from the survey found that the majority of participants do pay attention to adverts. 67.4% of participants indicated that when adverts are on they usually "watch and listen" to them. More primary school indicated that they "watch and listen" to adverts, which suggests that younger children maybe more susceptible to advertisements. This is consistent with previous research which indicates that older children pay less attention to advertisements and are more able to differentiate between adverts and the television program (Beder, 1998).

With the vast majority (87.5% and 90%) of food and beverage adverts shown on Fiji1 and Mai TV falling into the 'junk food' category, it is not surprising that 84.7% (n=886/1046) of products named by participants also fell into this category. Not only are the majority of foods and beverages that children see advertised 'junk food', but some advertisements appeared to give misleading messages. Numerous products were presented to be healthy choices, however according to the profiling system, they were identified as 'junk food'. Products are promoted as being healthy or nutritious despite the fact that they are high in fat, sodium or

sugar and comfortably fall into the ‘junk food’ category. Examples can be seen in the television adverts for a local brand of Chicken Sausages which are promoted as being “healthy, nutritious and delicious” with “no difference between chicken sausages and chicken breast”. However this product was found to be very high in sodium (905mg per 100g) and is far from being classified as “healthy”. When participants were asked to name a healthy food product they had seen advertised, Chicken Sausages made up 31% (n=5/16) of incorrect (unhealthy) responses. Another example can be seen in the television advert for a brand of Corned Beef which could be easily misinterpreted. It features a mother saying “now times have changed and I can afford to buy the best for my family” and makes references to a “healthy meal”. Corned Beef was found to be high in both saturated fat and sodium, also falling into the “junk food” category. Corned Beef made up 12.5% (n=2/16) of incorrect answers when participants were asked to name a healthy food product. It is important to recognise that advertising can affect the nutritional knowledge of young people which they could subsequently carry for life.

### **6.2 Street Advertisements:**

Non-broadcast mediums can also create an environment which children and adolescents are continuously exposed to branded products. Outdoor food advertisements, including billboards, signs and posters are viewed as a relatively inexpensive method of advertising with potentially very high impact. People tend to view the same street advertisements regularly; therefore repeated brand exposure is achieved (Luke, Esmundo & Bloom, 2000).

Street advertisements were found to be abundant around Suva streets with a total of 56 ‘junk food’ advertisements found along Suva’s main road alone. 67 ‘junk food’ advertisements were found within an 805 metre radius of Samabula Primary School and 59 ‘junk food’ advertisements were found around Indian College. It is reasonable to assume that many of the students would be walking within this radius to get to or from school, and therefore exposed frequently to the adverts. Advertisements around an 805metre radius of each school were somewhat comparable to an Australian study of 40 primary schools where an average of 45.8 “non-core” food advertisements were found within a 500 metre radius of each school (Kelly, Cretikos, Rogers & King, 2008).

With this number of advertisements displayed in the vicinity of each school, it is surprising that only 10% of Primary School participants and 31% of Secondary School participants

indicated that they had seen food advertisements on buildings or on the roadside. It is likely that the participants are failing to recognise these as paid advertisements. Evidence suggests that subtle or unnoticed advisements can have similar persuasive effects on children's food preferences (Morley, 2007).

There is limited research available investigating the effects of outdoor food advertising on children's food choices and preferences however outdoor food advertising appears to be an important mechanism for food marketers to target children. The high frequency of these advertisements around schools indicated that children are repeatedly exposed to branded advertising as they travel to and from school.

### **6.3 Sponsorship of Events:**

A number of high-profile events were identified that had been sponsored by 'junk' foods. Sponsorship of sports events can portray contradictory messages about what constitutes a healthy lifestyle. Children and adolescents come to associate the sponsoring product with sports and physical activity and come to believe it is healthy. 'Energy' products such as Milo contribute to this confusion as they are marketed as providing energy and vitamins; however they are high in sugar and fat (Consumers International, 2008). An example of this can be seen in the product Powerade which was a major sponsor of the FIFA World Cup on Mai TV. Powerade advertisements showed people playing soccer and the product enhancing their performance, creating the impression that Powerade makes you good at sport. Although Powerade falls into the 'junk food' category, when participants were asked to name a "healthy" beverage they had seen advertised, 18% named Powerade thinking it was healthy. This made up 37% of all incorrectly named beverages.

The majority of participants from both schools were found to be aware of event sponsorship with 87.5% of primary school participants and 97% of secondary school participants able to name a sports event sponsored by a food or beverage product. 97.2% of the events named were sponsored by a 'junk food' product. During these events, the sponsoring product is usually displayed on numerous signs with products often distributed for promotional purposes. Sampling and give-aways are designed to increase product sales and encourage children and adolescents to try unhealthy foods.

This evidence demonstrates that there is a need for regulation of the sponsorship of such events. References to children can be found in the International Code on Sponsorship

(International Chamber of Commerce, 2003), which states that “Sponsorship should not be framed so as to harm children or young people or be framed so as to take advantage of their youth or lack of experience”. Language in this code is open to interpretation and it is reasonable to argue that a sponsorship program that encourages children and adolescents to consume more unhealthy food could be damaging to their health (British Heart Foundation, 2008).

#### **6.4 Product Recall and Persuasion:**

It was found that the majority of participants from both schools were able to name three food products and three beverage products they had seen advertised. Significantly more secondary school participants were able to name 6 products than primary school participants, although it is important to remember these were just two schools and the results may not be indicative of general trends. Participant’s ability to recall products appeared to improve with age, which would seem logical. 85% of all products named fell into the ‘junk food’ category. A clear association was found between the proportion of food products advertised that fall into the ‘junk food’ category and the proportion of ‘junk food’ products recalled by participants.

Results indicate that advertising has some persuasive effect on participants with 94% (n=170/190) indicating that seeing advertisements has made them want to try the advertised product. Advertising seemed to be more effective on the younger participants, 98.9% of primary school participants indicated that seeing advertisements had made them want to try the advertised product. 91.1% of secondary school participants indicated that an advert had made them want to try the product. This indicates that adverts may be more persuasive to younger participants. This is consistent with previous research that finds younger children to be more vulnerable to advertisements and do not understand that the purpose is to persuade. Children over 12 years have been found to be more cynical about adverts, more aware of their purpose and less easily persuaded (Gunter, Oates & Blades, 2005).

In addition to leading participants to want to try advertised products, the majority of participants (70.5%) had also attempted to influence others to buy these products for them. No significant difference was found in influencing behaviour between participants. Evidence suggests that older children feel that they have more power to influence other people’s purchases and are therefore more likely to attempt this (Shoham & Dalakas, 2006). 70.5% of participants have asked others to buy an advertised food or beverage products for them. This

provides strong evidence that children and adolescents in Fiji are affected by ‘junk food’ advertising and legislation to protect them is required.

### **6.5 Project Limitations:**

Due to time and resource restraints for this project, it was necessary for data to be collected from participants through a self administered questionnaire. As a result, it was necessary for participants to be of an age where they could participate and understand the survey without assistance, hence preventing the participation of younger children. In order to ensure that participants were capable of effectively completing the questionnaire, the two classes with the oldest children were selected by the principal of the primary school to participate. The participants consisted of older children within the age range of 11 to 18 years. While responses by younger children would have been valuable, this method of collecting data from younger children would not have been appropriate. There are some significant differences between the results obtained from the primary and secondary school, allowing inferences to be made around possible responses of younger children. However the inclusion of only two schools in Suva, means that these results cannot be considered to be representative of the Fiji-wide situation.

Radio advertising is another prominent medium of ‘junk food’ advertising in Fiji and around the world. Due to resource limitations, the extent of ‘junk food’ advertising on the radio was not investigated. 51.1% of primary school children and 80.6% of secondary school children indicated that they had heard food and beverage advertising on the radio. Further research would provide deeper insight into the exposure of children and adolescents to ‘junk food’ advertising via this medium.

This evidence is limited as only two schools participated in the questionnaire. Results maybe more accurate if random samples were obtained from students in numerous schools around Suva, however this was not possible due to resource limitations.

Accuracy in the television exposure times of participants is also limited as participants indicated the amount of time they spend watching television through multiple choice questions with each response representing a range of hours. The responses to these questions were later coded in order to calculate approximate averages. While these averages are only approximate, the comparisons made are valid as the same coding and averaging method was

used to compare participant's exposure times across both schools and across week days and weekend days.

Both schools participating in this research were located in Fiji's capital city, Suva. This research also only investigated street advertisements in Suva. Different factors impact the diets of children and adolescents in rural communities and other urban areas. Evidence shows that children and adolescents living in urban areas consume significantly more imported food with a higher proportion of saturated fat and refined sugar. Children and adolescents in rural areas tend to consume more traditional Fijian food (Kado, 2000). However, the exposure of children to advertising in Fiji is likely to increase with time across the population, and it would not be feasible to try to regulate advertising just in urban areas, therefore national regulations are still justified.

This research also only investigated Fiji's two terrestrial (free-to-air) channels and each channel was reviewed on two week days and two weekend days within the same week. More accurate results may be obtained if this assessment was conducted over numerous weeks.

## **7. Conclusions and Recommendations**

The findings from this research demonstrate that children and adolescents in Suva are being exposed to, and affected by the 'junk food' advertisements which are abundant in their daily environment. It was found that 'junk food' adverts and sponsorships were noticed by participants and seem to influence their food preference and nutrition knowledge. These results indicate that the situation around 'junk food' advertisement and sponsorship in Fiji is likely to be in line with the current global evidence which indicates a strong need for action.

The review of Fiji's free-to-air channels, as well as the investigation of street advertisements and sponsorships of events, shows that there is extensive food and beverage promotion to children. It was also found that, in line with global evidence, the large majority of food promoted is energy-dense, nutrient poor food (junk food) that undermines recommendations for a healthy diet.

Through an assessment of participant's abilities to recall products they had seen advertised and name events sponsored by food and beverage products, it can be concluded that these children were aware of the food advertisements and promotions they are exposed to.

It was also found that food promotion had a damaging effect on participant's food knowledge, as some adverts were misleading and resulted in some participants identifying healthy foods incorrectly. It was also found that 'junk food' advertising affected participant's food preferences with 94% of participants indicating that seeing a food advert had made them want to try the advertised product. 75% of participants had attempted to influence other people to purchase a food product they had seen advertised for them.

The above evidence strongly supports the need for Fiji to implement legislation to protect children and adolescents from 'junk food' advertising. While the exposure of children to advertising, outside Suva may be considerably less, legislation is best implemented nationally. It is recommended that this legislation is based on the 'International Code on Marketing Food and Non-Alcoholic Beverages to Children' (CIOT, 2008).

Adopting this code would involve implementing legislation which would allow 'no marketing to children of energy-dense, nutrient poor foods that are high in fat, sugar or salt and brands associated with such foods'. Food categories could be defined by the nutrient profiling calculator made available by the FSANZ (2007) until a global classification system is determined by the World Health Organisation.

The adoption of this code would restrict all broadcast (television and radio) marketing of 'junk food and beverages' including all adverts and promotions broadcast between the hours of 06:00 and 21:00.

For non-broadcast marketing the code recommends that advertising should be banned where it is considered that children are potential recipients of the promotion in significant numbers regardless of the target audience. In practice, this will likely include restrictions of street advertisements around schools, sports grounds and playgrounds. Sponsored events should also be limited to sponsorship by products that do not fall into the 'junk food' category.

It is therefore recommended that the Fijian governments give their support to the development and implementation of the International Code on the Marketing of Food to Children, on which the WHO has developed a set of recommendations (WHO, 2010). As a

result of this legislation, it is expected that in the long-term, manufacturers in Fiji will seek to develop and market healthier food products. Monitoring of the impacts of the legislation would be important, and ongoing research into factors affecting children's diets would also be valuable.

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5. How many hours of Mai or Fiji TV do you usually watch on school days?

- a. 7 or more
- b. 4-6 hours
- c. 2-4 hours
- d. 1-2 hours
- e. <1 hr

6. How many hours of TV do you usually watch on the weekend?

Saturday:

- 7 or more
- 4-6 hours
- 2-4 hours
- 1-2 hrs
- <1 hr
- 

Sunday:

- 7 or more
- 4-6 hours
- 2-4 hours
- 1-2 hrs
- <1 hr

7. How many hours of Mai or Fiji TV do you usually watch on weekend days?

- a. 7 or more
- b. 4-6 hours
- c. 2-4 hours
- d. 1-2 hrs
- e. <1 hr

8. When advertisements are on TV, do you usually: (please tick)

- Watch and listen to the adverts
- Switch channels
- Turn the sound off and just watch the adverts
- Do something else – What do you do? \_\_\_\_\_

9. Can you list the products from three adverts for **food** that you have recently seen on TV?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

10. Can you list the products from three adverts for **drinks** that you have recently seen on TV?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

11. Why do you think you remember these adverts? (please tick all that apply)

- Because they had animals that you liked.
- Because they had characters that you liked.
- Because they were funny.
- Because they had a catchy song
- They were interesting to watch
- They had a special offer
- Because they are shown on TV a lot
- I'm not sure.
- Other: Please explain \_\_\_\_\_

12. Did seeing these adverts make you want to have some of these products?

Yes

No

Sometimes



**9.2 Appendix 2:**

**Table 1: Coding of Multiple Choice Responses Used for Calculating Average Hours of Television Exposure.**

Multiple Choice Response Options	Response Codes for Averages
7 or more	7.5 hours
4-6 Hours	5 hours
2-4 hours	3 hours
1-2 hours	1.5 hours
<1 hour	0.5 hours

**Table 2: Street Advertisement Categories.**

Sponsored Store Sign	Signs outside shops and on roadside.
Poster	Posters outside shops and in shop windows.
Bill Board	Large Street Signs
Sponsored Other	Sponsored Rubbish Bin, Road Banner, Rooftop, Bus Stop.

**Table 3: Events Sponsored by “Junk Food” Products in Suva, Fiji.**

Date	Event	Event Type	Target/participants	Sponsor
Jun-09	Fiji Squash	Sports	Children	KFC
Sep-09	Fiji Amateur Basketball	Sports	Secondary Schools	Twisties
Oct-09	FMF Chow Games	Sports	Schools	FMF Chow Noodles
Jun-10	Olympic Day Run	Sports	Family	McDonalds and Twisties
Jul-10	Spell Well, Kids Spelling	Spelling	Kids, TV	FMF Chow Noodles
Jul-10	Vodafone Mic	Music program	Youth, TV	Coca-Cola, KFC
Jul-10	Fifa World Cup	Sports	Family, TV	Coca-Cola, Pepsi-cola, Poweraid, McDonalds
Aug-10	School dance competition	Dance	Schools	Tuckers Ice-cream
Aug-10	Coca-Cola Games	Sports	Secondary Schools	Coca-Cola
Aug-10	Fiji Hibiscus Festival	Festival	Family	Coca-Cola
Aug-10	Music Concert	Concert	Family	McDonalds
Ongoing	Fiji Rugby Union	Sports	Professional sports	Pepsi-Cola
Ongoing	Primary School Rugby	Sports	Primary School	FMF Chow Noodles
Annual	Milo Kaji, Rugby	Sports	Schools	Milo

**Table 4: Categorized Food and Beverage Products Advertised on Television**

Food Products in 'Junk Food' Category.	Food Products in 'Healthy' Category.	Beverage Products in 'Junk Food' Category.	Beverage Products in 'Healthy' Category.
Crest Chicken Sausages	Maggi 2 Minute Noodles	Powerade	Novel Tea
Tuckers Ice Cream	Meadowlee	Mc Donald's Frozen Coke	Aqua Water
Golden Country Corned Beef	Taste of India Dahl Soup	Vico	
FMF Chow Noodles	Skipper Tuna	Pepsi	
Farmers Sausages	Weetbix	Sprint	
Oxford Corned Beef	Crest Chicken		
Red Top Tomato Sauce			
Snickers			
Twisties			
KFC			
Flora			
Mc Donald's			

### 9.3. Appendix 3:

#### **Estimated Television Advertisement Exposure Times:**

An average of 71.1% of total television watched during the week consisted of Mai TV and Fiji1 (Fiji's free-to-air channels). An average of 86.9% of television watched during the weekend consisted of Mai TV and Fiji1.

#### **Fiji1: Indian College**

##### Week Days

88.3% (n=91/103) of Secondary School students indicated that they usually watch Fiji1, based on an average free-to-air television exposure time of 1.5 hours per week day (average total TV time 2.1 hours X 0.711) and an assumption that they are watching TV after 3:30pm. It can be estimated that secondary school children are exposed to 5.5 adverts per week day. This accumulates to a total of 27.5 'junk food' advert per week, or 1430 per year. That is a total annual exposure time of 11.9 hours. This is comparable to a study undertaken in Australia where children were found to watch 2.5 hours of television per day and exposed to 9 'junk food' advertisements (Neville et. al, 2005).

##### Weekends:

During the weekend on Fiji1, based on an average exposure time of 3.2 hours per weekend day (Average total TV time 3.7 hours X 0.869), with no assumption around the times they are watching, it can be estimated that on average secondary school students are exposed to a minimum of 3.6 'junk food' advertisements each weekend day. This accumulates to 7.1 'junk food' adverts per weekend, or 370.5 per year. That is a total annual exposure time of 3.1 hours.

##### Total Exposure:

The 88.3% of secondary school students who usually watch Fiji1 are therefore on average exposed to a total of 15 hours of 'junk food' advertisements each year.

#### **Mai TV: Indian College.**

##### Week Days:

42.7% (n=44/103) of Secondary School students indicated that they usually watch Mai TV. Based on an average television exposure time of 1.5 hours per week day and an assumption that they are watching TV after 3:30pm, it can be estimated that secondary school children are exposed to 1.1 adverts per week day. This accumulates to a total of 5.5 'junk food' advert per week, or 286 per year. That is a total annual exposure time of 2.4 hours.

Weekends:

During the weekend on Mai TV, based on an average exposure time of 3.2 hours per weekend day, with no assumption around the times they are watching, it can be estimated that on average secondary school students are exposed to a minimum of 1 'junk food' advertisement each weekend day. This accumulates to 2 'junk food' adverts per weekend, or 104 per year. That is a total annual exposure time of 0.87 hours.

Total Exposure:

The 42.7% of secondary school students who usually watch Mai TV are therefore on average exposed to a total of 3.3 hours of 'junk food' advertisements each year.

**Fiji1, Samabula Primary.**

Week Days:

Of the 64.8% (n=57) of primary school students who indicated that they usually watch Fiji1, based on an average television exposure time of 1.3 hours per week day (average total TV time 1.8 hours X 0.711) and an assumption that they are watching TV after 3:30pm, it can be estimated that primary school children are exposed to 4.8 adverts per week day. This accumulates to a total of 23.8 'junk food' adverts per week or 1239 per year. That is a total annual exposure time of 10.3 hours.

Weekends:

During the weekend, based on an average exposure time of 3.0 hours per weekend day (average total TV time 3.4 hours X 0.869), and no assumptions around the times they are watching, it can be estimated that on average primary schools are exposed to a minimum of 3.2 'junk food' advertisements each weekend day. This accumulates to 6.4 'junk food' adverts per weekend, or 334 per year. That is a total exposure time of 2.8 hours.

Total Exposure:

The 64.8% of primary school students who usually watch Fiji1 are therefore on average exposed to a total of 13.1 hours of 'junk food' advertisements each year.

**Mai TV: Samabula Primary.**

Week Days:

38.6% (n=34/88) of Primary School Students indicated that they usually watch Mai TV. Based on an average television exposure time of 1.3 hours per week day and an assumption that they are watching TV after 3:30pm, it can be estimated that primary school children are exposed to 1.0 adverts per week day. This accumulates to a total of 5 'junk food' advert per week, or 260 per year. That is a total annual exposure time of 2.1 hours.

Weekends:

During the weekend on Mai TV, based on an average exposure time of 3.0 hours per weekend day, with no assumption around the times they are watching, it can be estimated that on average primary school students are exposed to a minimum of 0.8 'junk food' advertisements each weekend day. This accumulates to 1.6 'junk food' adverts per weekend, or 83.2 per year. That is a total annual exposure time of 0.7 hours.

Total Exposure:

The 38.6% of primary school students who usually watch Mai TV are therefore on average exposed to a total of 2.8 hours of 'junk food' advertisements each year.

**Calculating Weighted Average:**

**Indian College**

15 hours (from Fiji1) X 91 participants + 3.3 hours (from Mai TV) X 44 participants

$$= 1365 + 145.2$$

$$= 1510.2$$

$$1510.2/135$$

$$= 11.2 \text{ hours of junk food adverts per year}$$

**Samabula Primary**

13.1 hours (from Fiji1) X 57 Participants + 2.8 hours X 34 Participants

$$= 746.7 + 95.2$$

$$= 841.9$$

$$841.9/91$$

$$= 9.3 \text{ hours of junk food adverts per year.}$$

**9.4. Appendix 4:**

***Ethics Approvals.***



## **Fiji National Ethics Review Committee**

Phone • (679) 3221424 /3221481; Fax • (679) 3318227  
Ministry of Health  
P.O. Box 2223, Govt. Bldgs.  
Suva, FIJI

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28 June 2010

Silvia Hope

Australia

Dear Ms. Hope,

Thank you for your application for review to the Fiji National Ethics Review Committee (FNERC).

**Title of Research: The awareness and exposure of children to junk-food advertising and sponsorship in Fiji.**

I am pleased to inform you that the FNERC has granted approval for your above-mentioned study until 30<sup>th</sup> December, 2010. If the study cannot be completed in the timeframe given, please write to us for an extension, accompanied by a progress report.

Please quote the NHRC reference number and the name of the project in any future correspondence.

If you have any further queries on these matters or require additional information, please do not hesitate to contact the secretariat on telephone: (679) 3221424 or email: [pushpa.wati@govnet.gov.fj](mailto:pushpa.wati@govnet.gov.fj).

Best Wishes,

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**La Trobe University  
Faculty of Health Sciences  
MEMORANDUM**

**TO:** Priscilla Robinson  
Wendy Snowdon  
School of Public Health

**SUBJECT:** Reference: **FHEC10/110**

Student or  
Other Investigator: Silvia Hope

Title: **The awareness and exposure of children to junk-food  
advertising and sponsorship in Fiji**

**DATE:** 17 August, 2010

The Faculty Human Ethics Committee's (FHEC) reviewers have considered and approved the above project. You may now proceed.

Please note that the Informed Consent forms need to be retained for a minimum of 5 years. Please ensure that each participant retains a copy of the Informed Consent form. Researchers are also required to retain a copy of all Informed Consent forms separately from the data. The data must be retained for a period of 5 years.

Please note that any modification to the project must be submitted in writing to FHEC for approval. You are required to provide an annual report (where applicable) and/or a final report on completion of the project. A copy of the progress/final report can be downloaded from the following website:  
<http://www.latrobe.edu.au/rgso/forms-resources/forms/ethic-prog-final.rtf>

Please return the completed form to The Secretary, FHEC, Faculty of Health Sciences Office, La Trobe University, Victoria 3086.

**If you have a student/s involved in this project, a copy of this memorandum is enclosed for you to forward to the student(s) concerned.**



**Neil McDonald**  
Secretary  
Faculty Human Ethics Committee  
Faculty of Health Sciences



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Pushpa Wati  
Secretary

**FIJI NATIONAL ETHICS REVIEW COMMITTEE**