APPLYING MARKETING THEORY IN EDUCATIONAL SETTINGS: A STUDY OF COMMUNICATION PROCESSES WITHIN SCHOOL-BASED HEALTH PROMOTIONS

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虎穴に入らずんば虎子を得ず。
Koketsu ni irazunba koji o ezu.
If you do not enter the tiger‘s cave, you will not catch its cub.
Japanese Proverb

ABSTRACT

School-based health promotions targeted at improving nutrition and increasing physical activity are seen by governments and public health experts as integral to reducing obesity among children even though such promotions often produce disappointing results. This mixed methods research involving six case schools explored the application of marketing theory in educational settings and postulates that marketing communications processes are relevant when facilitating school-based health promotions. The research intention was to determine the impact of communication processes on the implementation of school-based health promotions by investigating children's exposure to promotions and outcomes of promotions. Hence stakeholder perceptions and expectations of promotions were analysed. Additionally, communication enhancers and inhibitors for promotions were identified and communication approaches used by Health Promoting Schools (HPS) were compared with those used by non-HPS. Principals and teachers were interviewed to discover selection, implementation and health promotion outcomes while parents were surveyed about the influence of school-based health promotions on their children's eating and exercise behaviours. Children participated in focus groups to determine their perceptions of health promotions, issues and behaviours. Data were analysed using a blended models framework combining best practice principles from marketing communications theory and behavioural theory. The framework was used to explore communication processes within school-based health promotions and behavioural outcomes of those promotions. It was discovered, first, that government policy and community priorities impact upon which health messages are promoted and why. Second, it was found stakeholder roles and relationships impact upon when and where health is promoted and by whom. Third, the extent to which health concepts are integrated into school life highlighted the importance of how health is promoted. Finally, it was established that communication processes and related behaviours, which take place within different environmental contexts, are influenced by communication noise, the skills and abilities of parents and children, and environmental conditions. Future research directions include examining how health priorities of school communities can be combined into a shared vision for health promotions. Clarifying stakeholder roles and examining formation, strength and success characteristics of stakeholder relationships in health promotions is a possibility too. Exploring the HPS initiative and environmental influences on healthy behaviours also warrants further investigation.

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FOREWORD

Style has always been, in my mind, the author's Self, the creative expression of that Self.
– Whit Burnett

Doctoral theses often appear to follow a conventional formula in terms of structure and writing style. Yet, each writer, and his or her writing, is unique. This thesis is the story-telling of my research and as such is characteristic of myself; my thinking and writing. Here, I outline key points regarding the language, stylistic conventions, graphic design and structure of this work.

A distinguishing feature is the use of personal pronouns (e.g. *I/we*, *me/us*, *myself/ourselves*, *my/our*) which appears somewhat uncommon in academic writing. I consider that it is an important characteristic which emphasises my roles as researcher and author, and my ownership of this thesis and the ideas herein. Similarly, although colour and design features also appear limited in the presentation of theses, I have taken such liberties in order to present a piece of work which provides interest and originality in addition to academic contributions.

The use of language is also noteworthy, particularly Māori which is the language of New Zealand's indigenous people. Māori words are included in this thesis because they are an integral component of New Zealand language and culture. Specifically, the words and phrases convey meaning for New Zealanders and emphasise the unique New Zealand context of the research. Indeed, some participants integrated Māori words into their dialogue, perhaps to express ideas within a New Zealand frame of reference or because they considered the Māori words would better encapsulate their sentiments. Māori words are shown in italics and where possible a translation is provided. Note the spelling of the word *Māori* includes a macron above the letter *a* (i.e. *ā*).

Italics are also used to indicate foreign words such as the Latin terms *per se* and *vice versa*. Two terms used specifically when referring to the conceptual frameworks in this thesis are *a priori* and *a posteriori*. The term *a priori* refers to presupposed knowledge, that is propositions knowable prior to, or independently of, experience (Sober, 2001). Hence my initial conceptual framework for the study is termed the *a priori* model as it was developed *before* the research was conducted. *a posteriori* is the reverse of *a priori* and refers to knowledge based on experience (i.e. empirical knowledge) (Sober, 2001). My revised conceptual framework presented in the second part of the thesis is, therefore, an *a posteriori* model, based on the findings of the research. Additionally, italics are used for emphasis and to highlight special terms such as the names of specific health promotions (e.g. *Jump Jam Kidz Aerobix*).

Footnotes are used for explanatory or supplementary information. There are a considerable number of footnotes, but these are intended to provide additional information without cluttering the text. Generally, the footnotes contain contextual information for readers who may be unfamiliar with the health and education sectors in New Zealand.

A glossary is included (p. xiv) to provide definitions of key terms, entities and constructs. Acronyms are used to represent organisations such as health and education service providers, health promotion programmes and theoretical concepts. In the first instance within each chapter, terms are written out in full with the acronym in brackets (e.g. ‗Health Promoting Schools (HPS)'). For each successive use of that term within that chapter the acronym is used (e.g. ‗HPS'). As overuse of acronyms is likely to reduce the flow of writing, I have opted *not* to use acronyms in all situations in which they may apply.

With respect to structure, the thesis consists of nine chapters, divided into four parts. Part One comprises Chapters One, Two and Three which collectively detail the research context and procedures. Chapters Four and Five form the second part of the thesis (Part Two) which pertains to the data collected and the application of the theoretical framework. Part Three, containing Chapters Six, Seven and Eight presents the results and findings of this research. The final part of the thesis, Part Four, comprises Chapter Nine which is the Conclusion. The content of each part is described in further detail at the outset of that part. References and Appendices are included at the end of the thesis.

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GLOSSARY

ANZA	Association of New Zealand Advertisers	ANZA was founded to provide advertisers with a collective voice in dealings with Government, advertising agencies and the media. ANZA is concerned with the development, promotion and advocacy of advertising and marketing communications for the benefit of New Zealand (Association of New Zealand Advertisers Inc., n.d).
ARPHS	Auckland Regional Public Health Service	ARPHS provides services for the population of the three District Health Boards covering the Auckland region - Auckland District Health Board (ADHB), Counties Manukau District Health Board (CMDHB) and Waitemata District Health Board (WDHB) (Auckland Regional Public Health Service, 2007).
BMI	Body Mass Index	BMI is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m2). For example, an adult who weighs 70kg and whose height is 1.75m will have a BMI of 22.9. BMI = 70 (kg)/1.752 (m2) = 22.9 (World Health Organization, 2006).
BOT	Board of Trustees	The BOT is the Crown entity responsible for the governance and management of a school. The board is the employer of all staff in the school, is responsible for setting the school's strategic direction in consultation with parents, staff and students, and ensuring that its school provides a safe environment and quality education for all its students. Boards are also responsible for overseeing the management of personnel, curriculum, property, finance and administration (Ministry of Education, 2008b).
CAANZ	Communications Agencies Association of New Zealand	CAANZ is the industry association for advertising and communication agencies (Communication Agencies Association of New Zealand, 2008).
ECE	Early Childhood Education	ECE services provide education and care for young children from babies to school age and include crèches, kindergartens, centre or home-based education and care, playgroups and playcentres (Ministry of Education, n.d.).
ERO	Education Review Office	The ERO is a government department whose purpose is to evaluate and report publicly on the education and care of students. The ERO reviews schools and early childhood education services every three years (Education Review Office, 2008).
FGC	Food and Grocery Council	The FGC represents New Zealand manufacturers and suppliers to the grocery industry (Food and Grocery Council, 2009).
FIG	Food Industry Group	FIG is responsible for driving the New Zealand Food Industry's Obesity Action Strategy. FIG comprises members of the New Zealand Food and Grocery Council (FGC), The Association of New Zealand Advertisers (ANZA), the Communications Agencies Association of New Zealand (CAANZ) and the Television Broadcasters Council (TBC) as well as a range of other media members (Food Industry Group, 2007).
FIS	Fruit in Schools	A government-sponsored initiative designed to encourage children to eat more fruit and adopt healthier lifestyles (Ministry of Health, 2007). Participating schools receive a free piece of fruit for each child each day (for up to three years).
FOE	Fight the Obesity Epidemic	FOE is a Charitable Trust aiming to stop and reverse the rise of obesity and type 2 diabetes in New Zealand (Fight the Obesity Epidemic, n.d.).
FOF	Feeding our Futures	A social marketing campaign launched by the Health Sponsorship Council (HSC) as part of the Ministry of Health's HEHA strategy. FOF is designed to help parents establish healthy eating practices for children and offers tips and advice consistent with the nutrition guidelines promoted in schools (Health Sponsorship Council, 2007).

HBM	Health Belief Model	The HBM is a model which posits that health behaviour is a function of the perceptions an individual has of vulnerability to an illness and the perceived potential effectiveness of treatment with respect to deciding whether to seek medical attention (Rosenstock, 1966, 1974a, 1974b).
HEHA	Healthy Eating - Healthy Action: Oranga Kai - Oranga Pumau	The New Zealand Ministry of Health strategy designed to address the areas of nutrition and physical activity in order to reduce the risk of non-communicable diseases such as cardiovascular disease, diabetes, cancer and obesity (Ministry of Health, 2004a).
HOI	Health Outcomes International	HOI is a healthcare management consultancy firm that provides support to health planners, funders and service providers to achieve their goals. HOI offers a wide range of services to both public and private sector clients, based on evidence based models of effective and efficient practices (Health Outcomes International, 2007).
HPS	Health Promoting School(s)	In HPS health is viewed as a holistic concept where members of the school community work together to identify and address health issues. Schools choose specific interventions to address issues of importance to their community (World Health Organization, 2003b).
HSC	Health Sponsorship Council	The HSC is a New Zealand government agency that promotes health and healthy lifestyles. We do this by developing and delivering health promotion and marketing programmes (Health Sponsorship Council, n.d.).
ICT	Information and Communication Technologies	ICT includes electronic information-processing technologies such as computers and the Internet, as well as fixed-line telecommunications, mobile phones and other wireless communications, networks, broadband, and various specialised application devices ranging from barcode scanners and Braille readers to global positioning systems (GPS). ICT devices can be embedded in other machines and appliances to increase their functionality, from watches and washing machines to cars (Digital Strategy, n.d.).
IM	Integrated Model of Behaviour Change	The IM is a framework which posits that performance of a given behaviour is a function of whether an individual has a strong intention to perform the behaviour, the necessary skills and abilities to do so and whether there are environmental constraints preventing performance of the behaviour (Fishbein, 2000; Fishbein, Hennessy, Yzer, & Douglas, 2003).
IMC	Integrated Marketing Communications	The coordination and integration of all marketing communications tools, avenues and sources within a company into a seamless program that maximises impact on consumers and other end users at minimal cost (Clow & Baack, 2002).
MPR	Marketing Public Relations	The marketing aspect of public relations. See also Public Relations (PR).
NAG	National Administration Guidlines	The NAGs for school administration set out statements of desirable principles of conduct or administration for specified personnel or bodies (Ministry of Education, 2008a).
NEG	National Education Guidelines	The NEGs are defined by Sections 60A of the Education Act 1989 and have four components: national education goals (desirable achievements and government policy objectives for the school system), foundation curriculum policy statements (concerning teaching, learning, and assessment), national curriculum statements (regarding areas of knowledge and skills for students) and NAGs (relating to school administration) (Ministry of Education, 2008a).
NZCER	New Zealand Council for Educational Research	The NZCER is an independent, educational research organisation that provides educators, students, parents, policy makers and the public with innovative research, analysis and advice (New Zealand Council for Educational Research, 2008a).
OECD	Organisation for Economic Co-operation and Development	The OECD is an inter-governmental organisation that provides the setting for democratic and market oriented countries to study and develop economic and social policies with the ultimate aim of maximising economic growth. New Zealand joined the OECD in 1973 (Ministry of Foreign Affairs and Trade, 2009).

PE	Physical Education	As in the Health and PE Curriculum, which focuses on the well-being of the students themselves, of other people, and of society through learning in health-related and movement contexts (Ministry of Education, 1999).
PHA	Public Health Association	The PHA is a voluntary association which promotes public health and influences public policy (Public Health Association, 2008b).
PMP	Perceptual Motor Programme	PMP is a motor coordination programme which aims to develop children's motor skills that are foundation skills for many activities in the classroom (Moving Smart Ltd., 2009).
PMT	Protection Motivation Theory	PMT describes adaptive and maladaptive coping with a health threat as a result of two appraisal processes. Appraisal of a health threat and appraisal of coping responses result in the intention to perform adaptive responses (protection motivation) or may lead to maladaptive responses (Rogers, 1975; 1983).
PR	Public Relations	PR is promotional efforts targeted at corporate constituencies such as employees, stakeholders and consumers intended to create goodwill for a company's image (Chitty, Barker, & Shimp, 2005).
SCT	Social Cognitive Theory	SCT states that people learn from each other through methods such as observational learning and role modelling, which are mediated by cognitive processes (Bandura, 1977, 1986).
SPARC	Sport and Recreation New Zealand	SPARC is the government agency responsible for sport and physical recreation in New Zealand. Their mission is to see all sport and physical recreation organisations operating effectively, individually and collectively, as part of a sport and physical recreation system that achieves outcomes that matter to New Zealanders (SPARC, 2008b).
TBC	Television Broadcasters Council	The TBC is an industry organisation representing the non-competitive interests of free-to-air television broadcasters in New Zealand. The members are MediaWorks TV, Television New Zealand and Māori Television (Television Broadcasters' Council, n.d.).
TPB	Theory of Planned Behaviour	The TPB extends the TRA by adding perceived behavioural control as a determinant of intentions and behaviour (Ajzen, 1988, 1991).
TRA	Theory of Reasoned Action	The TRA was designed to explain all behaviour under voluntary control. Intention is the proximal determinant of behaviour, defined as the motivation required to perform a particular behaviour. A person's behavioural intention depends on their attitude about the behaviour and subjective norms (Ajzen & Fishbein, 1980).
WHO	World Health Organization	The WHO is the United Nations specialised agency for health. WHO's goal is the attainment by all peoples of the highest possible level of health.

PART ONE
RESEARCH CONTEXT

This first part of this thesis comprises Chapters One, Two and Three which collectively provide an overview of the research. The research investigates communication processes within school-based health promotions from a marketing perspective to explore the application and effectiveness of marketing principles in school settings. Part One establishes the _real world' context of the research, outlines the research agenda and procedures, and explores communications and behavioural theory to develop a conceptual framework for the study.

Chapter One examines the research issue, focus, objectives and contribution. The chapter also discusses issues surrounding children's health and school-based health promotions in New Zealand. Chapter Two comprises a critique of reviewed literature. Literature used included background information on school-based health promotions as well as a review of key streams of literature contributing to the development of a theoretical framework for the study. The first stream is communication theory, including marketing communications, health communications and other pertinent research in the field of communications. Second, behavioural theory is discussed, specifically with respect to the use of behavioural models in predicting and explaining health behaviour. This study's *a priori* conceptual framework is presented in the final section of Chapter Two.

Chapter Three summarises, and provides justification for, the research methods and procedures used in this study. The research involved a case study design consisting of six primary schools. Quantitative and qualitative data collection methods were used. For each school case, interviews were conducted with the principal and teachers, a self-completion questionnaire was distributed to parents, and focus group sessions were conducted with children.

CHAPTER ONE
SCHOOL-BASED HEALTH PROMOTIONS: TELLING OR SELLING A HEALTHY LIFESTYLE?

> "... Young Kiwis are sedentary and are making poor food choices and more of them are becoming overweight or obese. This issue is potentially the greatest single threat to the health of New Zealand families, and our biggest public health challenge. We are not alone in that threat. Obesity has become one of the most pressing health challenges across the developed world. We all have a responsibility to do something – within our homes, our schools and our communities."
>
> *– Rt. Hon. Helen Clark, New Zealand Prime Minister (2006)*

School-based health promotions are an integral component of government-led initiatives targeted at improving nutrition, increasing physical activity and reducing obesity in New Zealand and worldwide. Yet, evaluation studies of school-based health promotions often report disappointing results in terms of long term behaviour changes. Furthermore, while effective communication processes are vital in the delivery of health promotions, there is a paucity of research that examines such processes in educational settings. This thesis, therefore, explores communication processes within school-based health promotions. In doing so, it proposes a uniquely fresh perspective on the topic by investigating how marketing principles, successfully employed by businesses, might be applied in a social marketing context to promote health more effectively.

This chapter provides background information important for understanding the research issue. First, obesity and the Labour-led[1] New Zealand government's response to obesity are discussed. This is followed by a review of school-based health promotions within New Zealand, centred on health promotions targeted at improving nutrition, increasing physical activity and reducing obesity. The focus of the research, applying marketing theory to communication processes within school-based health promotions, is then discussed and research objectives are presented. Key contributions of the research are also summarised in this chapter.

1.1. Problem Orientation

1.1.1. Obesity

The increasing prevalence of obesity and associated health problems is recognised worldwide (World Health Organization, 2000). Academic literature highlights concerns for the

[1] The New Zealand government was Labour-led from 1999 to 2008. The health and education policies discussed in this thesis were either existing or enacted by the Ministries of Health and Education during 2004-2008 when the research was conducted. The ministries are responsible for the government's activities relating to health and education, and as such, are servants to the current government. The government is now National-led, headed by John Key who was elected Prime Minister during the November 2008 General Election.

medical and social costs of obesity related diseases in countries such as America, Canada, New Zealand and Australia, as well as in European and Asian countries[2]. Likewise, obesity is topical in consumer media. In New Zealand, a national newspaper, *The New Zealand Herald*, for example, frequently reports on obesity and related issues[3].

The World Health Organization (WHO) (2003a, p. 3) states ―obesity (defined as a Body Mass Index (BMI) score of 30 and above[4]) has reached epidemic proportions globally and is a major contributor to the global burden of chronic disease and disability". Obesity is a major risk factor for diet-related diseases, including type 2 diabetes, cardiovascular disease, hypertension, stroke and some types of cancers. While obesity is recognised as a global problem, this research focuses on obesity and related issues in New Zealand. A principal reason for this stems from findings of the 2006/07 New Zealand Health Survey in which the New Zealand Ministry of Health (2008) found one in three adults were overweight and a further one in four were obese. One in five children was overweight and a further one in twelve was obese.

In acknowledgment of the obesity problem in New Zealand, the New Zealand Ministry of Health (2003a, 2003b, 2004b) launched ‗Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau[5]' (HEHA). HEHA is, ―a strategic approach to improving nutrition, increasing physical activity and achieving healthy weight for all New Zealanders" (2004a). The HEHA strategy calls for actions from government, non-government and private sector agencies, to implement workplace, school-based and community health promotion initiatives.

The HEHA strategy could be considered a form of social marketing. Social marketing refers to the use of marketing to design and implement programmes to promote socially beneficial behaviour change (Grier & Bryant, 2005). Social marketing is used by public health practitioners to address a wide range of health issues. Equally, marketing, health promotion models and behavioural theory can be used to design school-based health initiatives. That is the focus of this thesis, as school-based health promotions are a key component of HEHA involving schools increasing physical activity, improving nutrition and reducing obesity among children. School-based health promotions in New Zealand are discussed in the following section.

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[2] See, for example, Birmingham, Muller, Palepu, Spinelli, and Anis (1999); Florentino (2002); Jebb and Lambert (2000); Katzmarzyk (2002); Khan and Bowman (1999); Seidell (2000); Swinburn et al. (1997); Wellman & Friedberg, (2002).

[3] The paper publishes articles on topics such as the presumed link between food advertising and obesity (Cumming, 2005; Dorfman, 2005; Ferguson, 2005; Oliver, 2003), nutrition and physical activity in schools (Dearnaley, 2004; Dye, 2004a, 2004c, 2005a, 2005b; Thomson, 2006) and other obesity related issues (Dye, 2004b; Gregory, 2003; Hoby, 2003; Middleton, 2004; Revill & Hinsliff, 2004; Roberts, 2004).

[4] See Glossary, p. xiii, for full definition.

[5] ‗Oranga Kai – Oranga Pumau' is a translation of ‗Healthy Eating – Healthy Action' into Māori.

1.1.2. School-based Health Promotions in New Zealand

Compulsory education in New Zealand is divided into primary, intermediate and secondary schooling. Primary schools are the first level which caters for children from the age of five years. A contributing primary school offers Year 0 to the end of Year 6 (approximately ages 5-10). Children in Years 7 and 8 (approximately ages 11-12) may either be in a full primary, or a separate intermediate school, secondary or composite/area school. All schools (both private and state funded) are required to follow the New Zealand Curriculum, which is a set of national curriculum statements defining learning principles and achievement aims for students (Ministry of Education, 2004). Health education requirements are detailed in the Health and Physical Education (PE) component of the curriculum (Ministry of Education, 1999) and include health education, PE and home economics. Schools are required to incorporate these areas of learning into programmes for students up to the end of Year 10 (14-15 years old)[6].

Schools devise their own individual curriculum; they do so to put into practice policy enshrined within national curriculum statements. Taking into account local needs, priorities, and resources, curriculum documents are thus (ideally) designed by schools in consultation with their communities (Ministry of Education, 2004). Throughout New Zealand, primary schools incorporate into their curriculum a variety of nutrition and physical activity promotions to suit their school and community. Table 1.1 presents examples of these promotions which range from nationwide initiatives (e.g. *5+ A Day*, a campaign designed to encourage consumption of fruit and vegetables) to local community activities (e.g. school gardening projects). Some promotions are ongoing, such as the *School Food Programme* which provides schools with resources, guidance and support to develop an environment which encourages healthy eating (National Heart Foundation, 2004). Others may have a set duration culminating in a particular event, for instance, the *Jump Rope for Heart* programme. *Jump Rope for Heart* can be implemented any time during the school year by integrating skipping into the curriculum for anywhere between four and twelve weeks using the resources provided. The programme finishes with a ‗Jump Off', an event where the school celebrates physical activity and children showcase the skipping skills they have learnt (National Heart Foundation, 2006).

The HEHA strategy documents produced by the New Zealand Ministry of Health (2003a, 2003b, 2004b) stress that health promotion in schools should be an integral part of every day school activities, rather than taking the form of discrete curriculum components with a finite duration (such as a six week module of nutrition education). Health Promoting Schools (HPS) in particular, are seen by the Ministry of Health (2001) as an effective means to improving children's health. This is important because the emphasis on school-based health promotions is a key government initiative,

[6] Note this study is concerned with primary schools only.

and yet little is known about communication approaches within schools and the impact of them on children's health.

Table 1.1. Examples of New Zealand School-Based Health Promotions

Programme/Initiative	Brief Summary
5+ A Day	The objective of the programme is to encourage all New Zealanders to eat 5 or more servings of fresh fruit and vegetables a day (United Fresh, 2004).
Health Promoting Schools (HPS)	Health is viewed as a holistic concept where members of the school community work together to identify and address health issues. Schools choose specific interventions to address issues of importance to their community (World Health Organization, 2003b).
Jump Jam Kidz Aerobix	An aerobics programme for primary and intermediate schools designed by Brett Fairweather, a New Zealand and world aerobics champion (Kidz Aerobix Limited, 2006).
Jump Rope for Heart	The programme promotes the importance of physical activity and healthy lifestyles through curriculum-based skipping and movement skills (National Heart Foundation, 2006).
School Food Programme	Schools are provided with free resources to help identify and address nutritional issues (e.g. menu redevelopment for school lunchrooms) (National Heart Foundation, 2004).
Walking School Bus	A 'bus' that walks along a set route with at least one adult 'driver', picking children up at designated stops and walking them to and from school (RoadSafe Auckland, 2001).

The HPS initiative is a programme developed by the WHO designed to put into operation health promotion concepts. A HPS is one constantly strengthening its capacity as a healthy setting for living, learning and working (World Health Organization, 2003b). In order to create supportive environments which promote healthy eating and physical activity, the New Zealand government-led HEHA strategy encourages schools to become HPS, focusing on nutrition, physical activity and obesity as priority issues. The New Zealand HPS initiative was first piloted in Auckland and Northland schools in 1997. Becoming a HPS is voluntary and the initiative does not have a prescribed format *per se*. Each school is encouraged to work with its community to identify priority health issues. With guidance from HPS coordinators (typically based at district health boards[7]), schools can then identify specific health promotions to be incorporated into the curriculum.

[7] District Health Boards (DHBs) are responsible for providing or funding the provision of health and disability services in their district. There are three health boards in the Auckland region: Auckland District Health Board, Counties Manukau District Health Board and Waitemata District Health Board and their areas of geographical mandate coincide with the geographical footprints of the Rodney District Council, North Shore City Council, Waitakere City Council, Auckland City Council, Manukau City Council, Papakura District Council and Franklin District Council. The sum of these local government areas (LGA) comprise the Auckland region which is governed by the Auckland Regional Council. These geographical areas are important for this thesis because the nominated DHB/LGA areas defined the sampling area.

The HPS initiative is supported by government and non-government agencies which facilitate health promotions within the schools. In Auckland[8], where this study was conducted, HPS facilitators are based at a number of sites. These sites include Auckland Regional Public Health Services (ARPHS), Manukau City Council and the three district health boards in Auckland. Health promotions are delivered by various organisations such as the Life Education Trust (mobile classrooms), the National Heart Foundation (*School Food Programme*, *Jump Rope for Heart*), Manukau City Council (*Food in Schools*, *School Gardens project*) and Sport and Recreation New Zealand (SPARC) (*Push Play*) (Barnfather, 2004).

While HEHA encourages implementing school-based health promotions to address obesity, the strategy documents are limited. They present an overall approach for improving health, but offer little practical guidance about how schools might effectively communicate nutrition and physical activity promotions. The documents do not clearly communicate what level of funding, resources and commitment is required from a school to implement endorsed health promotions. With respect to HPS, for example, there is no discussion surrounding why schools may, or may not, buy-in to the initiative, what resource issues they may face in becoming a HPS or how this could be addressed. Consequently, the incentive to adopt such an approach may seem to be lacking for many schools. Furthermore, there is little evidence to suggest the HPS approach, or any other endorsed by the HEHA strategy, is more successful in achieving improvements in nutrition and physical activity than any other school-based health promotions. It is also unclear how information about promotions and promotional content is communicated among school stakeholders. These are important issues, because despite the emphasis placed on school-based health promotions by government, little is known about the communication approaches used by schools, or the effectiveness of them on children‘s health knowledge, attitudes and behaviour. These knowledge gaps highlight the need for research to explore communication processes within school-based health promotions, which provides the impetus for the research focus of this study.

1.2. Research Focus

This study investigates communication processes within school-based health promotions from a marketing perspective to explore the application and effectiveness of marketing principles in school settings. The study explores communication, defined broadly as the transfer of information and the generation of meaning (Frey, Botan, & Kreps, 2000), of health promotion elements among members of the school community. That is, the information transfer and meaning-making of health promotion objectives, processes, messages, resources and outcomes among stakeholders such as the

[8] Auckland is the largest urban area in New Zealand, consisting of Auckland City, North Shore City, Waitakere City, Manukau City, Papakura District and urban parts of Rodney and Franklin Districts. A map of Auckland can be found at http://www.newzealand.com/travel/library/o86143_23.pdf

principal, teachers, parents and children. Specifically, the study investigates the influence of communication processes on implementation of promotions, children's exposure to promotions and the outcomes of promotions. Communication processes are considered so that the effectiveness of school-based health promotions can be ascertained. These processes include how communication is occurring (channels), the types of messages transmitted (relating to nutrition, physical activity and obesity), how they are transmitted (communication tools) and any factors which may enhance or inhibit communication processes. This study also explores how communication occurs within HPS compared with non-HPS to determine what, if any, impact this has on health promotion. The research question and objectives of this study are presented in Table 1.2. A detailed discussion of these is presented in section 3.2.1 (p. 45) of Chapter Three, Research Procedures. The discussion includes how the research question and objectives were developed and provides support for why they are justifiable insofar as this study is concerned.

Table 1.2. Research Question and Objectives

RESEARCH QUESTION: *How might communication processes within school-based health promotions impact upon the implementation of those promotions, upon children's exposure to promotions and upon the outcomes of promotions?*		
OBJECTIVES:		
1. To explore communication processes within school-based nutrition and physical activity health promotions by analysing school stakeholders perceptions and expectations of the promotions in which they are involved.	2. To identify factors which may enhance or inhibit communication processes within school-based nutrition and physical activity health promotions.	3. To explore, in a qualitative manner, communication approaches used by Health Promoting Schools (HPS) as opposed to those used by non-HPS and the impact of these approaches on health promotions.

1.3. Research Contribution

An important contribution of this thesis is the development of a distinct theoretical framework to explore communications processes within school-based health promotions from a marketing perspective. The framework combines Integrated Marketing Communications (IMC) principles (Chitty et al., 2005) and the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein, Hennessy, Yzer, & Douglas, 2003) to illustrate communication processes within health promotions and behavioural outcomes resulting from exposure to those promotions. Analysis using the theoretical framework revealed an IMC approach could be used to facilitate health promotions in school settings.

Another significant contribution of this research is the identification of four communication themes pertaining to areas of impact upon communication processes within school-based health promotions. Theme A pertains to the juxtaposition of government policy and community priorities

and their impacts upon which health messages are promoted and why. The second theme is stakeholder roles and relationships, which impacts upon when and where health is promoted and by whom. Theme C found that the extent to which health concepts are integrated into school life highlighted the importance of how health is promoted. Finally, Theme D establishes that communication processes and related behaviours take place within different environmental contexts and are influenced by communication noise, the skills and abilities of parents and children, and environmental conditions. These themes are discussed in detail in Chapters Seven and Eight.

A distinction of applying marketing communications principles in educational settings is that schools promote health using communications tools which differ from those used by businesses to promote goods and services. In school-based health promotions, personal selling is the primary method of communication between teachers and children, and with face-to-face interaction, two-way communication and instant feedback, it is considered by marketers a particularly effective communications tool. Identifying the communications tools used within school-based health promotions makes an important contribution to marketing communications theory by showing how an IMC approach differs when applied in this social marketing context.

This thesis also provides important contributions to behavioural theory by applying the IM (Fishbein, 2000; Fishbein et al., 2003) in order to explore children‘s health behaviour. Prior research involving the IM framework focused on adolescent and adult health behaviours, but in this research, components of the IM were used to illustrate the influences on children‘s nutrition and physical activity behaviours[9]. Performance of healthy behaviours as a communications outcome of school-based health promotions is impacted upon by factors within five different contexts: the school environment, home environment, media environment, retail environment and the physical (built) environment. These impacting factors include communication noise, a person‘s skills and abilities, and environmental conditions. The research shows adults are pivotal in influencing children‘s health behaviours. Children require skills and abilities to adopt and perform healthy behaviours and may face environmental conditions which inhibit them in doing so. Furthermore, the skills and abilities of adults and the conditions facing them (e.g. teachers, parents, caregivers) can also prevent children from engaging in healthy behaviours.

Critically appraising the influence of social marketing versus commercial marketing practices on health behaviours is a further contribution of this study. In the social marketing context of school-based health promotions, schools focus on creating awareness of a healthy lifestyle, establishing a positive image of a healthy lifestyle and engaging children in healthy behaviours. The

[9] Although the IM can be tested empirically for a given behaviour (such as cigarette smoking or condom use, as in Fishbein and colleagues‘ research), in this study the IM components were used to develop a conceptual framework for examining children‘s performance of nutrition and physical activity behaviours as a whole and, therefore, were not tested on any one specific behaviour.

media and retail environments, however, contain marketing ‗noise' such as food promotions, which disrupt these communication processes. The research findings illustrate that marketing principles successfully used to promote consumption of unhealthy foods and beverages, are now increasingly needed to promote healthy eating, regular physical activity and other healthy lifestyle behaviours.

Finally, this thesis demonstrates that although school-based health promotions are effective in communicating nutrition and physical activity messages to children, the use of marketing principles could offer a coordinated and potentially more effective approach than what is currently the normative practice. In fact, HPS implement a framework similar to the characteristics of IMC principles, indicating the HPS initiative is ideal for promoting health among school communities. An important consideration, however, is that the manifestation of healthy eating and physical activity behaviours are influenced by numerous factors in the home, media, retail and physical environments. Environmental measures are recommended, therefore, to enable healthier eating and regular physical activity. These measures include improving availability and accessibility of healthy food, and the contextual features of neighbourhoods (e.g. community resources such as shopping, recreational, educational and health facilities).

CHAPTER TWO
MARKETING, COMMUNICATIONS AND BEHAVIOURAL THEORIES IN HEALTH: A CRITIQUE OF REVIEWED LITERATURE

2.1. Research Context and Scope

This research explores communication processes within school-based health promotions but offers research distinctiveness by using a marketing perspective and applying marketing communications principles in a social marketing context. The purpose of this chapter is to use the literature to clarify and amplify salient points pertaining to key theories and issues relating to the research topic so that a theoretical framework can be developed for the study. Key terms and theories are, therefore, critically appraised leading to the development of an *a priori* conceptual framework. The framework that has evolved is a unique, blended models approach. It is used to appraise school-based[10] health promotions where communication theory illustrates communication processes between stakeholders, and, behavioural theory illustrates links between communication and children's health behaviours. The framework is presented in this chapter and is then used in data analysis as described in Chapter Five.

Evaluation studies indicate communication among school stakeholders is important, yet communication processes are an under-researched aspect of school-based health promotions. Furthermore, as is shown later in this chapter, communication theory and behavioural theory are each relevant for investigating health promotions, but they do so disproportionately; indeed there are no frameworks which include constructs drawn from both fields of theory. The lack of focus on communication in previous health promotion research, therefore, when coupled with a lack of suitable theoretical frameworks upon which to link communication with subsequent behaviour, presents a substantial research gap. These knowledge gaps thus provide impetus for my research exploring communication processes within school-based health promotions using a distinct blended models approach.

[10] It is a given that schools are places within which teaching and learning occur. Typically this involves teachers (paid pedagogues) facilitating learning by attendees and those pedagogical skills which teachers use refer to didactic processes concerned with implementing some form of learning (i.e. relatively stable and permanent cognitive change). These are invariably about curricula and/or affective shifts. In a nutshell, education is about the matter, the manner and the cognitive perspective of learning (a la R. S. Peters) but at the same time, learners who attend schools become subjected to a host of other influences such as media, marketing and merchandise (J. J. Hansen, personal communication, December 11, 2008). The importance of these matters should not be understated, but they have been assigned to a footnote here precisely because this thesis is about marketing, *not* curriculum and pedagogy.

At this point, I also wish to acknowledge the boundaries of this review, given that the context of the research overlaps the fields of marketing, communications, health behaviour, education and health promotion. This thesis is concerned with the application of *marketing theory* in educational settings for the purposes of health promotion, and as stated above, I have chosen to focus on communication theory and behavioural theory to develop a blended models conceptual framework for the study. There are, therefore, bodies of education and health promotion literature which are *not* reviewed. For instance, there is a rich body of literature pertaining to topics such as curriculum and learning (e.g. McGee (1997); McGee and Fraser (2001); Ministry of Education (1999, 2004)), school health initiatives (e.g. Stewart-Brown‘s work for the Health Evidence Network), the social determinants of health (e.g. Marmot and Wilkinson (1999)), and, health promotion effectiveness (e.g. McQueen and Jones (2007)). These topics are not reviewed because they are beyond the scope of this study.

2.2. Social Marketing

In this section some general topic areas which pertain to the study are discussed in order to establish and clarify the research context. The study is concerned with applying marketing principles to school-based health promotions so social marketing is identified as the context in which marketing and health promotion intersect. To illustrate how social marketing is used in health promotion, examples of New Zealand mass media campaigns and school-based health promotions are detailed. As the study focuses specifically on school-based health promotions, a rationale is then presented for promoting health to children via educational settings. Next, the Health Promoting Schools (HPS) initiative is discussed because it provides a framework for integrated and holistic health promotion which the Ministry of Health (2001) is encouraging New Zealand schools to adopt. To conclude, evaluation studies of school-based health promotions are examined in order to identify factors important for successful health promotion outcomes.

As already stated, this research is concerned with school-based health promotions designed to improve nutrition, increase physical activity and reduce obesity among children. From a marketing perspective, such promotions are efforts to address a social issue: to improve health, and can, therefore, be considered in the context of social marketing. Social marketing refers to the use of marketing to design and implement programmes to promote socially beneficial behaviour change (Grier & Bryant, 2005). While there are other behaviour change strategies such as education, persuasion, behaviour modification and social influence, social marketing incorporates key principles of those strategies with marketing concepts, creating a unique and powerful approach to addressing social problems.

Social marketing is differentiated from other behaviour change strategies by being customer-focused, using a combination of influence factors to bring about change and emphasising behaviour as the bottom line (rather than simply a change in awareness or attitudes) (Andreasen, 1995). Consequently, these key characteristics lead social marketing efforts to be particularly effective when compared with other strategies in health promotion.

Based on commercial marketing practices, social marketing follows the four P's marketing mix framework, which considers *product, price, place* and *promotion* elements (Andreasen, 1995). In this study, the focus is on the promotion element, because the research explores communication processes within school-based health promotions. In marketing, promotion is encompassed by the term *marketing communications.* This represents the totality of promotion, referring to the collection of advertising, personal selling, sales promotions, public relations, event marketing and other tools used in communication between organisations and their customers (Chitty et al., 2005). Communication in marketing is concerned with a brand's marketing mix. Marketing communications facilitate exchanges with the brand's target audience by sharing the brand's meaning and positioning the brand as somehow distinct from competitive brands (Chitty et al., 2005; Shimp, 2003). To successfully promote brands, marketing philosophy argues amalgamating marketing communications is vital. Integrated Marketing Communications (IMC) is a specific approach to achieving this, set apart from other communications processes as it focuses on coordinating all of a brand's communication efforts so a consistent message is presented across whichever promotional tools are used (e.g. advertising, sales promotions, personal selling etc.).

Social marketing differs from commercial marketing as it is not concerned with promotion of a brand *per se*, but rather promotion of ideas to achieve changes in behaviour. Viewing school-based health promotions as social marketing efforts, communication facilitates exchanges with children by sharing ideas of healthy living, positioning a healthy lifestyle as favourable and engaging children in healthy behaviours. Although IMC is most commonly used to promote brands, and school-based health promotions do not typically do so, as communication processes, social marketing and IMC are in fact synonymous. IMC, like social marketing, is customer-focused, uses all forms of relevant media, and is designed to influence behaviour. Given the common underlying philosophies of social marketing and IMC, an integrated approach to communication is likely to impact upon success in social marketing contexts too.

The application of marketing to health promotion is widespread and public health practitioners are applying marketing principles and communication strategies to address a variety of health issues, including improving nutrition and increasing physical activity among children. Marketing concepts are most often applied to health promotion using an interdisciplinary approach that combines marketing principles with health promotion models and behavioural theory (Novelli,

1990). This hybrid approach may be used to develop behaviour-change strategies which can then be translated into interventions aimed at changing specific behaviours. Such interventions may include mass media campaigns, public policy interventions and school-based interventions (Kraak & Pelletier, 1998).

In New Zealand, a wide range of government-funded mass media campaigns have been used to promote social causes and health topics for many years. The *5+ A Day* campaign seeks to improve the nutrition practices of New Zealanders by encouraging the consumption of five or more servings of fruit and vegetables each day. To encourage New Zealanders to become more physically active, Sport and Recreation New Zealand (SPARC) developed the *Push Play* campaign, which promotes physical activity (30 minutes daily for adults and 60 minutes daily for children) for a healthy lifestyle. The *5+ A Day* and *Push Play* campaigns are currently widely promoted, not only through media campaigns, but also as initiatives in schools and the community.

Public policy and school-based health promotions targeted at improving nutrition and increasing physical activity are endorsed by, or result from, the implementation of the New Zealand government's „Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau' (HEHA) strategy. The strategy encourages school, workplace and community health promotions, delivered by a number of government and non-government agencies. School-based nutrition and physical activity health promotions are delivered through the Health and Physical Education (PE) curriculum which includes food and nutrition, physical activity, sport studies, and outdoor education (among others). Examples of school-based promotions include the HPS initiative (World Health Organization, 2003b), *The School Food Programme* (National Heart Foundation, 2004), *Jump Rope for Heart* (National Heart Foundation, 2006) and *Walking School Buses* (RoadSafe Auckland, 2001). Alongside these widely implemented promotions are smaller scale initiatives which target issues of particular concern to individual schools or communities. A rationale for delivering health promotions in the school environment is discussed in the following section.

2.2.1. Rationale for School-based Health Promotions

Schools provide an ideal opportunity for improving nutrition, increasing physical activity and reducing obesity among children (Reniscow, 1993; Story, 1999; Wechsler, Devereaux, Davis, & Collins, 2000). Children have intensive and continuous contact with schools during the first two decades of life (Reniscow, 1993). They eat one or two meals a day at school, including snacks and foods from the school cafeteria and vending machines (Reniscow, 1993; Wechsler, Devereaux, Davis, & Collins, 2000). School is, therefore, an environment within which children can learn and practice positive nutritional behaviours (Reniscow, 1993). There are also numerous resources available for physical activity, including gymnasiums, sports fields and play areas. Children have

opportunities to participate in physical activity during PE classes, recess periods and through extracurricular sports (Story, 1999; Wechsler et al., 2000).

School is also a supportive environment in which to implement nutrition, physical activity or obesity reduction promotions. Teachers and peers can act as role models (Wechsler et al., 2000) and provide social support for students (Reniscow, 1993). School nurses support children through the provision of screening (e.g. vision, hearing, dental hygiene) and behavioural counselling services (Reniscow, 1993; Story, 1999). Additionally, school-based health promotions can be of little or no cost to families, enabling exposure for children from low income families which other (e.g. clinical) programmes may not reach (Story, 1999).

2.2.2. The Health Promoting Schools (HPS) Initiative

The HPS initiative[11] employs a holistic approach to health promotion, where health is incorporated into all aspects of school life. A HPS is one constantly strengthening its capacity as a healthy setting for living, learning and working (World Health Organization, 2003b). The HPS framework does not focus on any one element of health (e.g. nutrition, physical activity, mental health), but rather provides a model which allows schools to identify and address health issues important to them and their community. The HPS initiative is regarded by the New Zealand Ministry of Health (2001) as an effective means to improve children‘s health and the HEHA strategy, therefore, recommends schools implement the HPS model.

An evaluation of the New Zealand HPS pilot project, involving schools in Northland and Auckland, was conducted during 1998-2000 by Phoenix Research, as documented by Wyllie, Postlethwaite and Casey (2000). The objectives of the evaluation were to gain understanding of the impact of HPS on schools and their communities, and to discover key dimensions for success of the initiative. Evaluation methods included interviews, a self-completion survey and focus groups with selected HPS stakeholders such as HPS coordinators, regional coordinators, public health nurses and HPS managers. Only perceptual and attitudinal data were collected; behaviour change as a result of the interventions was not measured.

Evaluation of the pilot project showed support and involvement from key stakeholders, such as principals, Board of Trustees (BOT) members, school health coordinators, HPS coordinators and public health nurses was vital to successfully implementing the initiative (Wyllie et al., 2000). Sufficient training for HPS coordinators was also important, as was the formation of a health team

[11] The concept of the 'Health Promoting School' emerged from complex innovations in Europe and North America in the 1980‘s (L. St. Leger, personal communication, July 08, 2009). The concept was developed and refined at a European symposium entitled 'The Health Promoting School', which took place in 1986. Young (2008) states the name 'The Health Promoting School' was in fact born during the planning of the event, although the concept had been evolving for several years.

within the school (usually consisting of the principal, HPS facilitator, parents and students). Other critical success factors included stakeholders having a clear understanding of what they were undertaking and a high level of commitment to the project (Wyllie et al., 2000).

No further evaluation studies of the New Zealand HPS initiative have been conducted. HPS has, however, been reviewed in research conducted for Auckland Regional Public Health Service (ARPHS) (2006) regarding childhood obesity prevention programmes. The ARPHS research identifies potential problem areas for HPS. These include a need for schools focusing on obesity prevention to clearly state their objectives and measure appropriate outcomes. There are also a limited number of schools involved in HPS and few multi-lingual resources (e.g. in Māori and Pacific Island languages). Communication difficulties among HPS facilitators and their school communities is another issue, as is the need for a comprehensive approach to programme delivery. Additionally there is a need to align health promotion activities with the curriculum in order to receive Ministry of Education support.

Several issues become apparent when the HPS evaluation and the ARPHS review are examined. First, these are the only studies to date regarding the HPS initiative in New Zealand, yet the HPS framework is promoted by the Ministry of Health as an ideal model for effective health promotion. Clearly, more research regarding HPS would be beneficial for stakeholders promoting and/or implementing the initiative. Second, the two studies indicate communication processes are an important influence on the implementation and outcomes of school-based health promotions. Findings of the HPS pilot evaluation and the ARPHS review are thus important to this thesis as they validate the need for research exploring communication processes within school-based health promotions, particularly communication approaches used by HPS. Furthermore, this study is likely to make a valuable contribution to local HPS knowledge as there is little New Zealand-based research.

2.2.3. Success of School-Based Health Promotions

A robust and growing body of literature indicates successful public health promotions and campaigns are those which utilise social marketing techniques and are underpinned by theory. Evaluation studies of school-based health promotions, however, often report disappointing results. The suggestion is that school-based health promotions increase knowledge, but rarely produce significant long term behavioural changes (Atkinson & Nitzke, 2001; Lister-Sharp, Chapman, Stewart-Brown, & Sowden, 1999; Warren, Henry, Lightowler, Bradshaw, & Perwaiz, 2003). This indicates that current educational strategies for health promotion are not achieving transformations in children‘s eating and physical activity behaviours. By way of explanation, Warren et al. (2003) suggests health promotion in schools requires replication in other social settings, such as the home

environment, to increase effectiveness. Success of school-based health promotions is likely to be dependent on numerous other factors too. Contento, Randell and Bach (2002), for instance, completed a comprehensive review of nutrition education interventions and found dietary change was dependent on personal motivations and sense of relevance of the change, as well as judgements of resources needed to do so and willingness to overcome barriers. Environmental change in the availability, accessibility and affordability of food (e.g. in school tuckshops and the wider retail environments), social and cultural norms, and community assets and empowerment (e.g. resources and collaborations) were also important. Other success factors in the implementation of health promotions, and the subsequent success of those promotions in changing behaviour, may include professional development for school staff, high levels of commitment and communication among stakeholders, and the ability to allocate sufficient time to health promotion processes (Wyllie et al., 2000). Schools also require support in terms of funding (Mukoma & Flisher, 2004; Wyllie et al., 2000), partnerships and resources (Deschesnes, Martin, & Hill, 2003; Wyllie et al., 2000).

The international body of literature pertaining to school-based health promotions continues to grow. In the course of this review, however, no studies were found which examined communication among stakeholders or communication processes in the delivery of school-based health promotions. This absence of literature, again, presents a significant knowledge gap, validating the need for my research on this topic. As indicated by Wyllie et al. (2000), implementation of health promotion programmes is dependent on effective communication among stakeholders. The focus is often placed on tailoring messages to the end user target group (e.g. children as a homogenous group, or sub-groups, such as junior or senior school children). Yet there is little consideration of communication processes: *how* communication takes place among *all* stakeholders (e.g. external promotions organisers and schools; teachers and parents) for the implementation and delivery of promotions. Communication may impact on whether stakeholders buy-in to health promotions, what strategies they adopt, how promotions are implemented, and what effect promotions have on children‘s health knowledge, attitudes and behaviour. Communication processes within school-based health promotions are, therefore, worthy of investigation as they potentially impact significantly upon the success of those promotions.

We now know communication processes are an important yet under-researched influence on health promotions. We know from a social marketing perspective, communications are used to promote ideas and behaviours among a target group. We also know that IMC offers a coordinated approach to communication efforts. My research, therefore, explores communication processes within school-based health promotions, but offers research differentiation by using a marketing perspective and applying marketing communications principles in a social marketing context.

2.3. Communication Theory

Communication theory is central to this research on school-based health promotions. The term communication can refer to a variety of activities and as such has multiple definitions (Frey et al., 2000). Communication can be viewed, for example, in the context of interpersonal communication, organisational communication and mass media communication among many others. Communication is derived from the Latin word, *communis*, meaning ‗to make common'. Although, there are multiple definitions of communication, most focus on one or both of the following two themes; communication as the transfer of information, or communication as the generation of meaning (Frey et al., 2000).

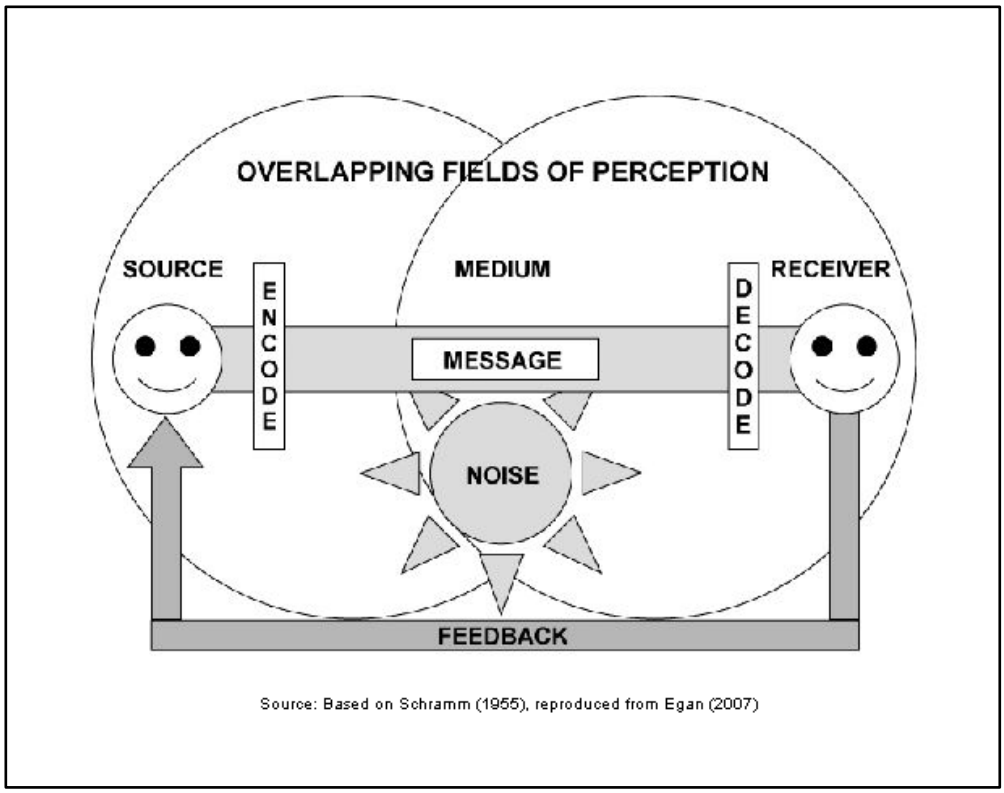
In this research, communication, as both the transfer of information and the generation of meaning, is considered in the context of marketing and health. As explained previously in section 2.2 of this chapter (p.11), marketing communications are brand-focused, designed to facilitate exchanges with the brand's target audience by sharing the brand's meaning and differentiating the brand from competitive brands (Shimp, 2003). In health, communication refers to activities which are directed towards improving the health status of persons and populations. ―Health communication may involve the integration of mass and multi-media communication with more local and/or personal traditional forms of communication" (Nutbeam, 1998, p. 355). For the purposes of this study, a marketing communications process is used to examine communication designed to promote health. Models of marketing communications processes are discussed in the following section.

2.3.1. Marketing Communications

The term marketing communications refers to the collection of tools used in communication between organisations and their customers such as advertising, personal selling, sales promotions, public relations, and event marketing (Chitty et al., 2005). A basic model of communication is shown in Figure 2.1 (p. 18). This model, based on the work of Wilbur Schramm (1955), is reproduced from a current marketing communications text (Egan, 2007). The model (or similar variants) is commonly cited in marketing texts and widely accepted as the basic model of mass communication. In Schramm's (1955) model, communication involves a source encoding a message and transmitting it to its destination via some channel, where the message is received and decoded. The key aspect is the source and destination must share something in common in order for understanding to take place. In the marketing of goods and services, organisations (source) create advertisements (encoding) delivered to audiences through a variety of promotional channels (e.g. television advertising; medium). Decoding occurs when the message is received. Communication is effective when the sent message is received and understood by the intended audience. Feedback, such as purchases, inquiries or complaints, occurs when the receiver responds to the message. Noise,

anything which distorts or disrupts a message, however, may interfere creating barriers in the communication process. Noise may occur between individuals (e.g. gender and social status), between companies (e.g. unfocused advertising) or within companies (poor communication between departments).

For this thesis, it is reasoned that Schramm's (1955) communication model, used to explain marketing communications processes, can usefully be applied to communication processes within school-based health promotions. Schools (source) implement health promotions (encoding) delivered to students through a variety of channels (e.g. classroom activities; medium). Decoding occurs when the students receive the health message. Feedback occurs when students respond to the message and could include, for instance, changes in students‘ awareness, knowledge and attitudes towards health issues. Noise barriers in the communication process, however, can occur between students and teachers (e.g. age), between schools and providers (e.g. unfocused health programmes), or within schools (e.g. poor communication among school stakeholders).



Source: Based on Schramm (1955), reproduced from Egan (2007)

Figure 2.1. A Basic Model of Communication

The basic model (above) illustrates communications processes, but marketing theorists (such as Don Schultz and Phillip Kitchen) argue a coordinated approach is more effective and propose IMC principles for communicating with customers. IMC is based on the foundation provided by the

basic model and emphasises amalgamating all of a brand‘s communication efforts. IMC is discussed in the following section.

2.3.2. Integrated Marketing Communications (IMC)

An early definition by Schultz (1993, p. 17) refers to IMC as ―the process of developing and implementing various forms of persuasive communication programs with customers and prospects over time”. Others such as Schultz and Kitchen (2000) and Duncan (2002) have extended the definition to include concepts such as relationships between stakeholders, brand value and the notion of IMC as a strategic business process. Clow and Baack (2002, p. 9) assert the consensus is to define IMC as ―the coordination and integration of all marketing communications tools, avenues and sources within a company into a seamless program that maximises impact on consumers and other end users at minimal cost”. The dimensions of IMC highlighted in these definitions are important because they illustrate that IMC offers more than simple models of communication; this is why it is favoured by marketers.

A detailed model of the elements of the IMC process is shown in on the following page. Again, this model is reproduced from a current marketing text (Chitty et al., 2005) and is based on the work of Wilbur Schramm (1955). The model illustrates the same process as the basic communication model, but shows each element of the process in greater detail. In this model, the source has a communication objective (i.e. awareness and/or image and behaviour) which is transformed into a message (e.g. advertisement) delivered via a message channel (media) delivered to the receiver who experiences a communication outcome (e.g. awareness, attitude change, behaviour). The communication outcome provides feedback for the source, and as in the basic model, noise is anything which distorts or disrupts a message, creating barriers in the communication process. This particular model of communication processes is a best practice framework for IMC, so I have, therefore, incorporated it into the conceptual framework of this study. The conceptual framework is discussed later in this chapter in section 2.5 (p. 40).

There are five key features which underpin the philosophy of IMC (Chitty et al., 2005), and set it apart from basic communications models. First, IMC planning *starts with profiling the customer* in order to determine the most appropriate messages and media for communication. Second, IMC *uses all forms of relevant media* to communicate with customers. Third, IMC seeks to *achieve communication synergy*, that is, all forms of communication (e.g. advertising, event marketing, sales promotions) must present the same brand message and convey messages consistently across all points of contact. Fourth, IMC is also concerned with *building relationships*. Successful relationships between a customer and a brand provide an enduring link which can lead to repeat purchases and generate loyalty towards the brand. Finally, IMC is concerned with *influencing*

behaviour of the target audience. Communication efforts must, therefore, do more than create brand awareness or favourable brand attitudes; an IMC programme should also encourage a behavioural response and move persons in the target audience to action (Chitty et al., 2005). Understanding the IMC philosophy is important for this thesis, because its distinct characteristics make it a best practice framework for marketing communications. Applying IMC in educational settings, for health promotion purposes, thus offers a communications approach which is potentially more effective than current, non-integrated promotional practices.

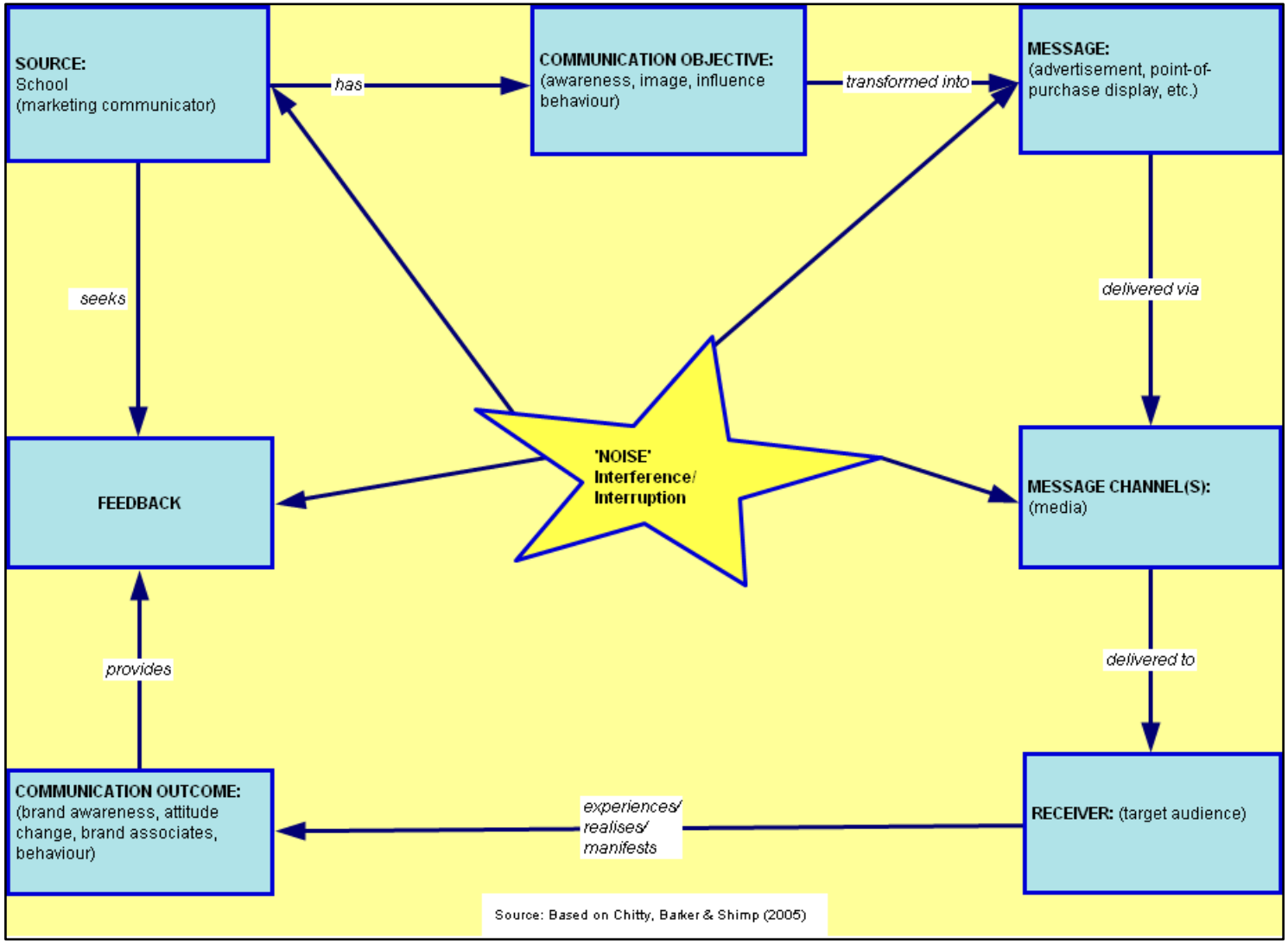


Figure 2.2. Marketing Communication Process

The significance and importance of an IMC approach in the commercial sector is well documented. Kitchen and De Pelsmacker (2004), for example, consider IMC the major communication development of the last century and a key competitive advantage of marketing. They note studies of advertising agencies in the 1990s show IMC "increased communications impact, made creative ideas more effective, provided greater communications consistency and would improve client return on investment" (2004, p. 19). Furthermore, although Kitchen and De Pelsmacker (2004) also acknowledge negative commentaries of IMC, they assert a wave of IMC development in the late 1990's has lead communication agencies to view IMC as the 'way forward'. As the marketing landscape continues to change, particularly with the growth of information technology, IMC is emerging as a strategy for gaining the competitive edge ("The importance of marketing strategy," 2006). Rather than reliance on single promotional tools (e.g. advertising) to achieve desired outcomes, IMC offers a more coordinated and strategic approach which ties into the overall function and future direction of the organisation.

While IMC is most commonly applied in business, there is potential for application in social marketing contexts. As discussed earlier in this chapter, social marketing and IMC are similar; both are customer-focused, use all forms of relevant media and are designed to influence behaviour. No health promotion research was found which specifically referred to an IMC approach, yet findings of studies in health promotion often point to key success factors which are effectively characteristics of IMC. For example, Jackson et al.'s (2007) review of the effectiveness of Ottawa Charter[12] health promotion strategies showed interventions employing multiple strategies and actions are most effective. Partnerships, and community engagement and involvement in decision making, are also central to effectiveness in health promotion. From an IMC perspective, using multiple strategies and actions equates to using all relevant media to communicate with customers. Partnerships are important in health promotion; relationships are important in IMC. Community engagement and involvement in health promotion is a customer-focused approach, just as IMC planning is customer-driven. Characteristics of successful health promotions match IMC principles, so clearly it can be argued IMC has relevance when facilitating school-based health promotions. In fact, the aims of IMC, "to persuade by means of communication, to affect behaviour, not just attitudes and to start with customers or prospects and then work backwards to develop effective communication" (Kitchen & De Pelsmacker, 2004, p. 7), could equally apply as the aims of school-based health promotions. The *Push Play* campaign, for instance, is an example of a mass media social marketing or health promotion campaign, also implemented in schools, which employs an IMC-like approach to delivery.

[12] The *Ottawa Charter for Health Promotion* was produced as a result of the First International Conference on Health Promotion, held in Ottawa, Canada (World Health Organization, 1986).

Push Play is a nationwide SPARC campaign to get more New Zealanders more active, more often. The campaign promotes 30 minutes of exercise for adults each day and 60 minutes for children. Communication of *Push Play* messages takes many forms, including mass media advertising, and print and online resources, such as activity packs for children, posters, and brochures. According to IMC philosophy, these communications must be consistent in content. Branding is used to develop identifiable colours and logos which provide a consistent ‗look' to all promotional material. Promotional elements should also be coordinated to target audiences with one consistent message (i.e. 30 minutes of exercise for adults, 60 minutes of exercise for children). Ultimately, evidence from the business sector shows positive outcomes as a result of IMC (e.g. Kitchen and De Pelsmacker's (2004) case study examples), so we could expect the use of IMC for health promotions like *Push Play* to result in more effective communication outcomes than other less coordinated approaches.

2.3.3. Communication among School Stakeholders

As this study is concerned with communication processes relating to school-based health promotions, a key topic of the review is communication between schools and their communities. The discussion explores communication processes taking place between parents and children, including parental involvement in developing children's nutrition and physical activity behaviours, and engaging children in education and learning. Communication between teachers and parents is also discussed with respect to developing partnerships between home and school.

2.3.3.1. Parental Involvement in Developing Children's Health Behaviours

Children begin learning nutritional behaviours in early childhood. Parents' food preferences and beliefs, children's food exposure, role modelling, and child-parent interactions around food can play an important role in developing children's food behaviours (Campbell & Crawford, 2001). Escobar's (1999) review of factors influencing children's dietary behaviours indicates young children are capable of learning to like and accept a wide variety of foods. Dalton (2004) notes that by age three children develop preferences, and aversions, for certain foods. Preferences are developed from repeated exposure to foods with a minimum of eight to ten times necessary for children to accept a certain food. Role modelling and family interaction are, therefore, vital for developing healthy eating practices. Dalton (2004) and Escobar (1999) suggest children's acceptance of foods follows the example of parents and siblings. Eating nutritious meals together with parents and siblings can thus increase the consumption of vegetables and lower the consumption of high fat foods.

Parenting styles are also important. Parents‘ efforts to restrict children‘s access to certain foods, such as those high in fat and sugar, may increase preferences for those foods (Dalton, 2004; Fisher & Birch, 1999). Rummel et al. (2000) suggest parental disapproval of particular foodstuffs can be interpreted by children as threatening their freedom of choice, and may motivate them to consume more of the product disapproved of, precisely because of the disapproval. Mills (2001) posits children (and perhaps also adults) like unhealthy food because it is unhealthy, or because they note some form of parental disapproval with regard to its consumption, perhaps linking to the ‗forbidden fruit‘ hypothesis[13] (Cantor & Nathanson, 1997).

Common strategies, such as rewarding children with sweets or biscuits for performing desired behaviours, have been shown in several studies across the last twenty years to significantly increase preferences for the ‗reward‘ foods (Birch, 1999; Birch, Marlin, & Rotter, 1984). Conversely, when engaging in an activity (such as watching television) is contingent on eating particular foods (such as vegetables), preferences for those foods decline substantially. Escobar (1999) concludes parents play a significant role in helping children develop healthy eating practices. She proposes that assisting parents to understand the importance of learning and experience in children‘s development of food preferences may enable them to promote development of positive eating practices. She also suggests parental and community involvement in modelling positive eating practices is more likely to be effective in reaching children than simply teaching them about nutrition. This is an important point, because while school-based health promotions *teach* children about healthy behaviours, the indication is that children also learn vicariously from the food *behaviours* of adults. Performance of healthy behaviours by parents thus communicates to children that such behaviours are normal. Essentially, modelling of healthy behaviours is an integral component of communicating a healthy lifestyle to children.

Physical activity behaviour is also affected by parents and family practices (Dietz & Gortmaker, 2001). Television viewing, computer use and other sedentary activities may decrease time spent being physically active. Sothern (2004) provides practical information for parents to promote physical activity. She recommends exposing children to a variety of exercise activities which are implicitly embodied within sports, e.g. dance, martial arts or swimming. Providing a nurturing environment for children to participate in physical activities can foster friendships with active children. Sothern (2004) also suggests short bursts of play are ideal for children and they should be given opportunities to climb, run and jump, in order to develop muscle strength and increase bone density. While in some neighbourhoods opportunities for organised sports or safe outdoor play are limited, Dietz and Gortmaker (2001) suggest walking to school or doing errands with parents as practical ways of including exercise in daily life. Thompson and Shanley (2004)

[13] ‗Forbidden fruit‘ describes something someone wants but cannot have.

identify parents modelling healthy eating and exercise behaviours as critical for developing healthy lifestyle behaviours. They suggest family involvement is integral in shaping children‘s exercise experiences. Children tend to be more physically active when parents support the activities they choose. Likewise, children are more likely to be active if their parents and siblings are active.

From this discussion I conclude family has a significant influence on nutrition and physical activity behaviours among children. To engage children in healthy behaviours, parents can model those behaviours and establish the home environment as one which supports healthy living. The role of parents and family in developing healthy eating and exercise behaviours among children is an important consideration in this study as school-based health promotions require replication at home to increase effectiveness (Warren et al., 2003). Parent or family involvement in school-based health promotions is, therefore, essential so parents can promote and reinforce key messages at home. The importance of parent involvement in learning is well-established in education literature, so the following discussion draws on this evidence to make a case for parental involvement in health promotions.

2.3.3.2. Parental Involvement in Children’s Learning and Education

In education literature there is ample evidence which suggests family support is critical to children‘s success in academic learning and social development. Henderson and Berla (1994), for instance, report on the function and importance of family in student achievement in school and the community. They draw on evidence from studies which evaluate the effects of programmes to help schools work more closely with families and communities to support them in providing wider opportunities for young people. Studies of family interaction, the relationship between parent involvement and student achievement, and characteristics of families as learning environments and their effects on student performance are also included. Major findings of Henderson and Berla‘s (1994) review indicate families make critical contributions to student achievement from early childhood and throughout schooling, and efforts to improve children's outcomes are more effective when the family is actively involved. Similarly, Caspe, Lopez and Wolos‘ (2007) synthesis of outcome-based empirical studies (published between 1999 and 2006) on effective involvement for elementary school children shows the importance of family involvement in children's academic achievement and social development. They find home–school relationships, defined as the formal and informal connections between the family and school setting, have positive benefits for children. These ‗connections‘ include parents communicating with the teacher, helping in the child‘s classroom, and participating in school activities.

In publications targeted at educators, the emphasis is on how to facilitate effective communication between home and school to involve families in education. Christenson and

Sheridan (2001) assert open two-way communication is important for effectively informing parents and teachers of what is expected with regard to students‘ behaviour and achievement. With open communication, parents and teachers are able to establish shared goals, mutual decision making and minimise misunderstandings. Teachers can also help parents understand how to reinforce learning at home. Brandes (2005) provides 20 practical guidelines for teachers to foster effective communication with parents. These guidelines include communicating often, using regular avenues such as newsletters and sharing student‘s goals and behavioural expectations. Christopher (1996) details methods for communicating with, and involving parents, such as letters, newsletters and information evenings. Christopher (1996) and Stevens and Tollafield (2003) also consider ways to better communicate during parent-teacher conferences, where parents are able to discuss and raise questions about their child‘s work with the teacher.

An important point to note is that while there are publications (such as those discussed above) designed to aid educators in communicating with parents, none of the works consider improving communication from the point of view of parents. So, while there is information available to help school staff communicate with parents, there is little in the way of help for parents seeking to communicate with staff. This discovery is critical, because although *two-way* interaction is considered central to effective communication (Christenson & Sheridan, 2001), education literature presents a mono-directional focus, from teachers to parents.

In New Zealand, the perceived importance of family and community engagement with education is highlighted by the Ministry of Education‘s ‗Team-up‘ campaign. The campaign, launched in February 2005, is designed to help families and communities engage their children in learning in everyday life situations. In doing so, parents and families can have a significant impact on their children‘s educational achievement. The campaign spokesperson is Tana Umaga (former captain of the All Blacks, the New Zealand national rugby team). Tana was selected as the campaign designers believe he is a strong role model for New Zealanders who can effectively connect and communicate with parents. As a Pacific Islander (a Samoan New Zealander), Tana is also considered an appropriate role model for reaching indigenous Māori and families from Pacific Island (Pasifika) origins. The New Zealand Government is working towards reducing disparities in educational achievement, such as those linked to socio-economic status and ethnicity, and Māori and Pasifika students are priority groups (Mallard, 2004). According to the Ministry of Education, the most important message Tana promotes is for parents to talk and do things with their children to encourage learning. The campaign includes television advertisements, online information and other resources targeted at parents to promote involvement in learning.

As this discussion shows, family involvement and effective communication is important for achieving positive outcomes in terms of student learning, behaviour, development and achievement.

Yet the importance of parental involvement and communication is unlikely restricted to these aspects of education alone. Effective communication between teachers, parents and students is vital in all aspects of education to achieve mutual understanding and shared goals. The relevance to this thesis is thus that communication among teachers and parents is also likely to be particularly important for health promotion, which requires replication and reinforcement at home to increase effectiveness (Warren et al., 2003). Open two-way communication in school-based health promotions would enable parents and teachers to establish a unified approach to improving health behaviours among children. A consideration, however, is the directionality of communication and the fact that both parents *and* teachers should be actively involved to achieve optimum results. Teachers could encourage parental involvement by guiding them to activities which would reinforce learning. Similarly, parents could share with teachers their home-based practices so that both school-based and home-based activities complement each other.

2.4. Behavioural Theory

In this section of the literature review, behavioural theory is discussed. Behavioural theory is important to this research as the intended outcome of social marketing, communications campaigns and health promotions is to influence specific health behaviours among a target group. This study examines school-based health promotions designed to improve nutrition behaviours and increase physical activity. Marketing communications principles can explain communication processes involved in such health promotions, but are most often combined with health promotion models and behavioural theory in order to examine behaviour or behaviour change (Novelli, 1990). The purpose of this discussion is, thus, to determine the role of theory in behaviour change and identify specific theories and models which could be used to explain and understand children‘s nutrition and physical activity behaviours.

2.4.1. The Role of Theory in Behaviour Change

Behavioural theory is important for this thesis in order to determine how messages, processes and evaluation procedures were developed in the school-based health promotions studied. Theories of behavioural prediction and behaviour change provide a means to identify determinants of any given behaviour, which is critical for the development of successful interventions intended to change behaviour (Fishbein et al., 2002). Theory can explain the dynamics of behaviour, and identify and explain the effects of factors (such as self-efficacy, social support and availability of resources) influencing behaviour (National Cancer Institute, 2003). Ultimately, the extent to which one can design an intervention to successfully influence a particular behaviour will be dependent on the extent to which one understands the underlying factors which influence performance of that particular behaviour (Fishbein et al., 2002).

Theory aids development of health promotion interventions, guiding translation of concepts into message strategies (National Cancer Institute, 2003). Rutter and Quine (2002, p. 18) highlight theory as the most important factor in the development of a ‚good' intervention stating, "Theories provide constructs, processes and hypotheses, and they point to procedures and methodologies for setting up interventions and testing their effectiveness… without theory there is no framework or underpinning, and no progress or development". Using theory to solve a behavioural problem requires an organised framework and forces one to make explicit assumptions regarding how the intervention will work (Glanz & Maddock, 2000; National Cancer Institute, 2003). Furthermore, theoretical health models foster conceptual thinking and can encourage practitioners to think beyond the concrete health issue at hand (Glanz & Maddock, 2000; National Cancer Institute, 2003). Analysis of the application of health models can determine the situations in which the model has previously been successful (Glanz, Rimer, & Lewis, 2003), providing guidance for those seeking to develop public health policy.

Theory can also be used to establish evaluation processes, by identifying elements of interventions which should be monitored or measured (National Cancer Institute, 2003). Evaluation may be used to compare the intended intervention with actuality, or explain or measure the intervention's outcomes (Ovretveit, 1998). The value of a theoretically grounded evaluation process is borne out in the evaluation's ability to assist fine-tuning of the intervention. Evaluation of programme implementation can provide a means to monitor progress, refine programme elements and explain programme effects (Baranowski et al., 2000). Evaluation aids decisions such as when to use a particular intervention, how to improve, extend or modify it, or whether it should continue (Ovretveit, 1998). Evaluations can also be used to explain and predict cause and effect mechanisms (‚causal mechanisms') in scientific research. Finally, the objective of most evaluations is to produce findings that can be generalised beyond the scope of the intervention studied (‚general principles') (Ovretveit, 1998).

Behavioural theory is important for this research exploring communication processes within school-based health promotions, as the intended outcome of those promotions is to influence children's health behaviour. Behavioural frameworks were also likely used in the development of specific school-based health promotions to be examined in this study. An understanding of behavioural theory is, therefore, beneficial for determining how health promotion messages, processes and evaluation procedures were developed. The following discussion presents a review of health behaviour models in order to identify key components of behaviour and determine a model of behavioural processes for inclusion in the conceptual framework of this study.

2.4.2. Social Cognition Models

Social cognition models are widely used theoretical frameworks which are used to predict and explain health behaviour (Rutter & Quine, 2002). Such models are based on the principle that, "people's social behaviour is best understood by examining individuals' beliefs about their behaviour in a social context, and their social perceptions and representations" (Rutter & Quine, 2002, p. 1). Social cognition models include Social Cognitive Theory (SCT) (Bandura, 1977, 1986), the Health Belief Model (HBM) (Rosenstock, 1966, 1974a, 1974b), Protection Motivation Theory (PMT) (Rogers, 1975; 1983), the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), the Theory of Planned Behaviour (TPB) (Ajzen, 1988, 1991) and the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein et al., 2003).

For the purposes of this research, the discussion focuses on SCT and the IM. SCT (Bandura, 1977, 1986) is relevant to the study as numerous authors identify it as the major model underpinning school-based health promotions (see for example Contento et al., 2002; Hardeman, Griffin, Johnston, Kinmonth, & Wareham, 2000; Lister-Sharp et al., 1999; St Leger, 1999). The IM is important too, because although it presents a comparatively recent (2000) development in behavioural theory, it uniquely integrates the core components of other leading behavioural models (namely SCT, the HBM, the TRA and the TPB). Fishbein (2000) proposes that while there are a wide range of theories of behavioural prediction, consideration of these theories suggests only a limited number of variables are needed to predict and understand any given behaviour. Consequently, Fishbein developed the IM model through which it became possible to draw together key variables of leading behavioural theories, not only to explain behaviour, but also to understand factors leading to behaviour. The conceptual framework for this study (as shown in section 2.5, p. 40), therefore, incorporates IM variables to illustrate the link between communication (i.e. health promotion exposure) and children's health behaviour. As will be shown within the review that follows, the *a priori* framework may be contestable. Accordingly in Chapter Five, an *a posteriori* model is presented.

2.4.2.1. Social Cognitive Theory (SCT)

SCT was developed by Bandura (1977, 1986) in order to improve on early conditioning theories (such as classical conditioning (Pavlov, 1927) and operant conditioning (Skinner, 1938, 1953)). Bandura claimed that while conditioning theories engendered more effective behaviour modification procedures than had previous theories, they only studied effects of the environment on behaviour, excluding the reverse influence of behaviour on the environment (Kaplan, Sallis, & Patterson, 1993). SCT posits that people learn from each other through methods such as observational learning and role modelling, each of which is mediated by cognitive processes. SCT,

therefore, combines behaviour, the environment and personal variables to create a three-part model, where each part interacts in reciprocal determinism (i.e. causation goes both ways) (Kaplan et al., 1993). SCT is shown in Figure 2.3.

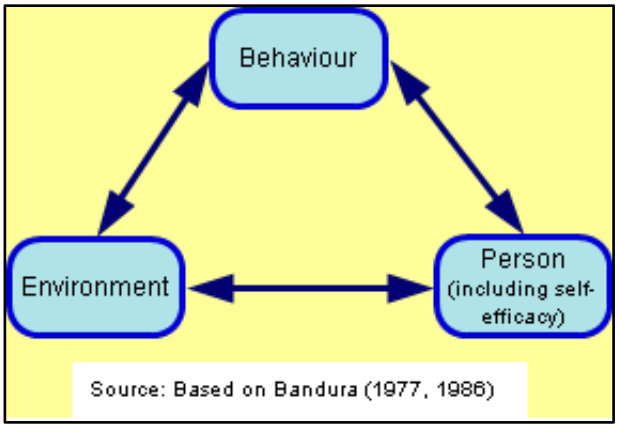


Figure 2.3. Social Cognitive Theory (SCT)

With respect to Figure 2.3, the *environment* comprises social elements such as family members, friends and colleagues, and physical elements such as size of a room, lighting and temperature. *Personal* variables are cognitive processes influencing behaviour, such as information and skills acquired through vicarious learning (learning by observing the behaviour of others). Cognitive processes also include learning, beliefs, expectations, emotions and motivations. SCT reasons that behaviour is determined by two key cognitive processes which are *outcome expectations* and *self-efficacy* expectations.

Outcome expectations derive from a person‘s beliefs that a specific behaviour, or cluster of behaviours, will result in certain outcomes (e.g. believing exercise will result in weight loss) (Kaplan et al., 1993). Self-efficacy is embodied in a person‘s belief in their own ability to perform a behaviour or cluster of behaviours (e.g. a person believing they can follow an exercise programme to achieve a weight loss goal) (Kaplan et al., 1993). According to SCT, behaviour is performed when a person perceives control over the outcome and when external barriers (such as time and monetary constraints) are few, and finally, when the individual has confidence in their own ability (Armitage & Conner, 2000).

For the purposes of this study, it is reasoned that SCT can be applied to health behaviours; it can be used, for example, to explain children‘s participation in physical activity. If a child sees a group of children enjoying playing sport together, the child is likely to want to join the group (environment and personal factors affecting behaviour). Furthermore, by joining in the activity, the child is likely to make friends with the other children and be accepted into the group (behaviour affecting environment). SCT could also be used to explain dietary behaviour. For instance, an adult

may have difficulty switching to a low-fat diet if other members of the family (e.g. spouse and children) are unwilling to consume low-fat meals (environment affecting behaviour). Consequently, the person may attempt to influence the environment by communicating the situation with members of the family, and encouraging the inclusion of healthy foods in the family‘s diet.

SCT has been used in numerous studies to predict a variety of health behaviours and intentions (Armitage & Conner, 2000; Keller, Fleury, Gregor-Holt, & Thompson, 1999). The self-efficacy construct in particular, is an important predictor of behaviour (Maddux & DuCharme, 1997), and is typically the dominant predictor (Armitage & Conner, 2000). Kaplan et al. (1993) provide examples of studies in which self-efficacy was successfully used to predict smoking behaviours. Armitage and Conner (2000) found self-efficacy to be influential in studies relating to stress coping, effective behavioural change and recovery from illness. Keller, Fleury, Gregor-Holt and Thompson (1999) conducted a review of studies which examined the relationship between the construct of SCT, self-efficacy and physical activity. All 27 of the studies in their review reported a statistically significant relationship between self-efficacy and exercise behaviour. The important point is that self-efficacy has been identified as a fundamental element in behavioural predication. Indeed, Armitage and Conner (2000) suggest the self-efficacy component of SCT is likely to be more important than SCT itself, based on the fact self-efficacy is a key construct in other health behaviour models (e.g. PMT and the TPB). For this thesis, I can, therefore, conclude that self-efficacy should be included in my conceptual framework as it is an important construct for explaining behaviour.

2.4.2.2. Evolution of Theoretical Frameworks: From SCT to the IM

Alongside SCT (Bandura, 1977, 1986) are a variety of theoretical approaches which have been used to predict and explain behaviour. Many of these frameworks incorporate the same or similar components and were, at their time of development, designed to improve on existing theories. In this section, the evolution of theoretical frameworks is examined, focusing on leading behavioural models summarised in Table 2.1 on the following page. The evolution of behavioural models has lead to the development of the most recent social cognition model, the IM. The IM incorporates key components of leading models, making it one of the most comprehensive behavioural models to date.

Table 2.1. Social Cognition Models

Framework	Developer	Brief Explanation
Social Cognitive Theory (SCT)	Bandura (1977, 1986)	People learn from each other through methods such as observational learning and role modelling, which are mediated by cognitive processes.
The Health Belief Model (HBM)	Rosenstock (1966, 1974a, 1974b)	Health behaviour is a function of the perceptions an individual has of vulnerability to an illness and the perceived potential effectiveness of treatment with respect to deciding whether to seek medical attention.
Protection Motivation Theory (PMT)	Rogers (1975; 1983)	PMT describes adaptive and maladaptive coping with a health threat as a result of two appraisal processes. Appraisal of a health threat and appraisal of coping responses result in the intention to perform adaptive responses (protection motivation) or may lead to maladaptive responses.
Theory of Reasoned Action (TRA)	Ajzen & Fishbein (1980)	Designed to explain all behaviour under voluntary control. Intention is the proximal determinant of behaviour, defined as the motivation required to perform a particular behaviour. A person's behavioural intention depends on their attitude about the behaviour and subjective norms.
Theory of Planned Behaviour (TPB)	Ajzen (1988, 1991)	The TPB extends the TRA by adding perceived behavioural control as a determinant of intentions and behaviour.
Integrated Model of Behaviour Change (IM)	Fishbein (2000), Fishbein et al. (2003)	Performance of a given behaviour is a function of whether an individual has a strong intention to perform the behaviour, the necessary skills and abilities to do so and whether there are environmental constraints preventing performance of the behaviour.

As in any theory development, changes in social cognition models appear prompted by a desire from theorists to improve on existing models. Bandura (1977, 1986), for example, developed SCT as he intended to improve on early conditioning theories. While classical and operant conditioning (Pavlov, 1927; Skinner, 1938, 1953) are forms of learning which focus solely on the environment and behaviour, SCT adds the concept of personal factors, acknowledging the role of cognitive processes in executing behaviour. Likewise, Ajzen‘s (1991) TPB was developed to extend the TRA (Ajzen & Fishbein, 1980). The addition of the perceived behavioural control component in the TPB provides a means to predict beyond volitional behaviour alone. The TRA and TPB are shown on the following page in Figure 2.4 and Figure 2.5 respectively.

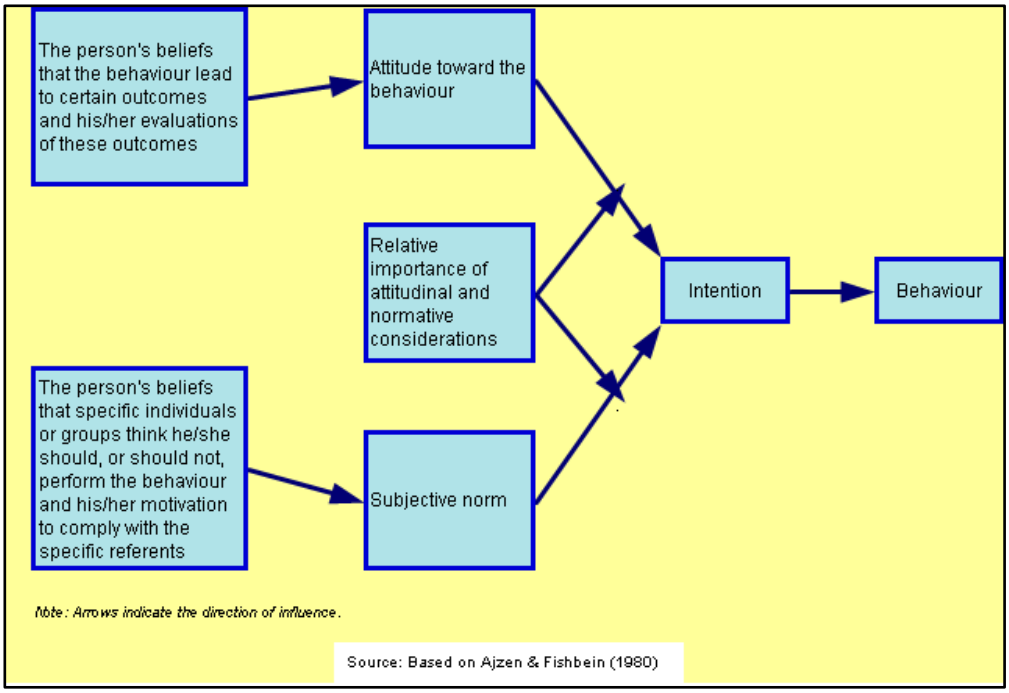


Figure 2.4. The Theory of Reasoned Action (TRA)

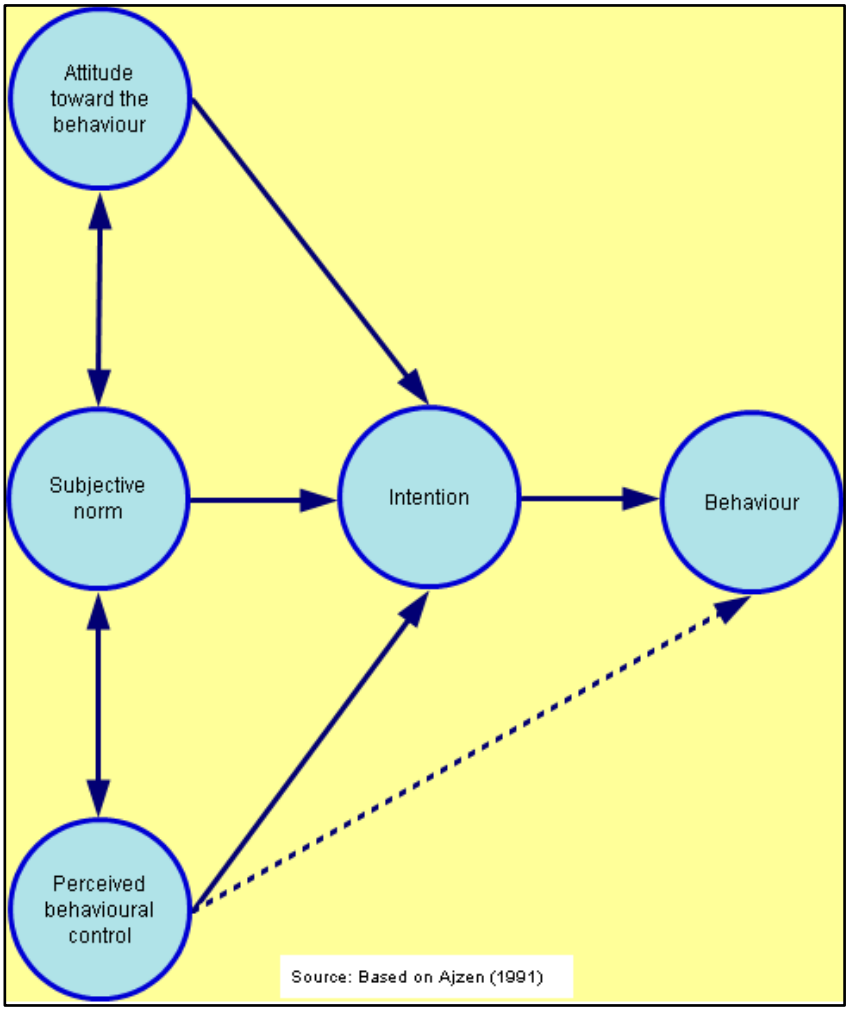


Figure 2.5. The Theory of Planned Behaviour (TPB)

Several social cognition models are also closely related, such as the HBM (Rosenstock, 1966, 1974a, 1974b) and PMT (Rogers, 1975; 1983) which are shown in Figure 2.6 (p. 34) and Figure 2.7 (p. 35) respectively. Although PMT was developed almost twenty years after the HBM, the perceived threat variable in each model is effectively synonymous. Furthermore, I would suggest while PMT may or may not have been intended to surpass the HBM, it does improve on it. The developer(s) of PMT maintained the perceived threat component in explaining behaviour, but they also included an intention stage. This is a key development as the intention component has gained support as an important element in predicting behaviour, particularly through Ajzen's (1991) TPB model. Intentions are considered to encapsulate motivational factors which influence behaviour. Ultimately, intention to perform (or not) certain behaviours is identified as an important component for understanding behaviour. Hence intention should be included in the conceptual framework for this research which explores communication processes within school-based health promotions including the behavioural outcomes of those promotions.

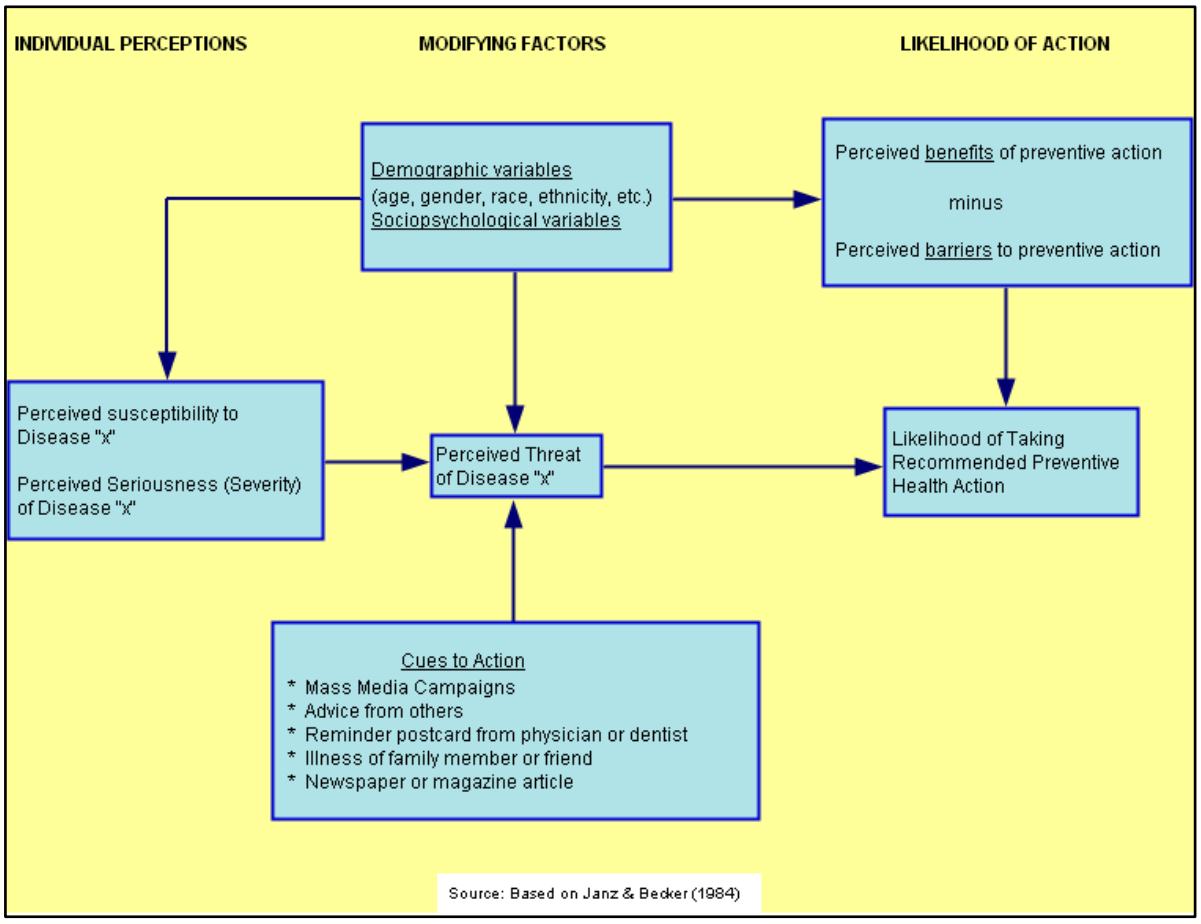


Figure 2.6. The Health Belief Model (HBM)

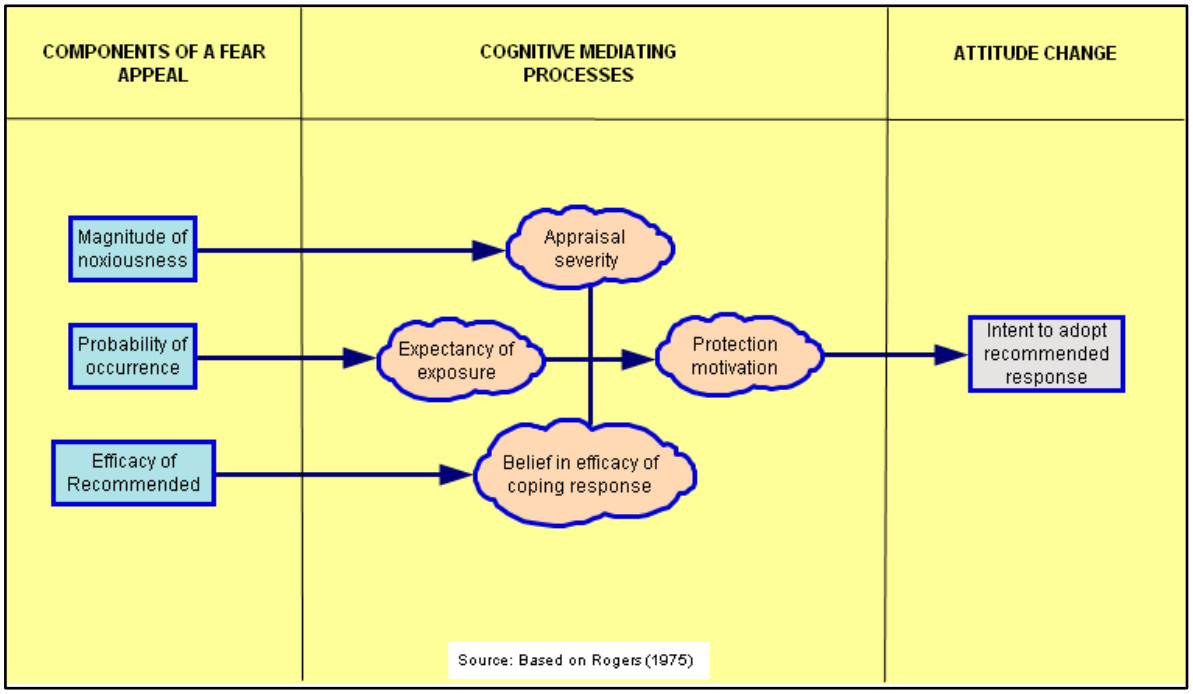


Figure 2.7. Protection Motivation Theory (PMT)

In the development of social cognition models over time, key constructs of previous models have been maintained. The perceived threat and perceived benefits and barriers concepts of the HBM and PMT can be likened to outcome expectancies, which are included in the assessment of attitudes to behaviour in the TRA and TPB (Maddux & DuCharme, 1997). Likewise, the importance of the outcome is measured by perceived severity in the HBM and PMT, and by assessment of attitudes and social norms in the TRA and TPB (Maddux & DuCharme, 1997). Self-efficacy, which originates from SCT, is included in the HBM and the PMT. In the TPB, Ajzen (1991) asserts perceived behavioural control is compatible with self-efficacy. Clearly, the similarity of certain constructs, and the continued inclusion of them in social cognition models, indicates they are important in explaining behaviour. It is important then to ensure the conceptual framework developed for this research includes these key constructs to explore children's health behaviours.

Maddux and Ducharme (1997, p. 143) recognise similarities among the TRA, TPB and other major theories, suggesting, "they are not different models, but simply different arrangements of the same basic conceptual building blocks". They indicate there is no consensus regarding which model best explains behaviour. The approach proposed by Maddux and Ducharme (1997) is to develop an integrated model which incorporates key components of leading models. They recommend using the TPB as a foundation, based on the following reasons: 1) perceived behavioural control encompasses self-efficacy; 2) the model has a perceived social norms component that other models do not; 3) expected consequences are measured in terms of outcome expectancy and outcome value, and; 4) the theory includes intention as a link between attitudes and beliefs and behaviour. The latest social cognition model developed by Fishbein and colleagues (2000; 2003), the IM, does exactly this. The

model integrates SCT, the HBM, the TRA and the TPB providing a framework which encompasses the ‗building blocks' identified by Maddux and Ducharme (1997). The IM is thus an ideal framework for examining children's behaviour in this research as it includes all the key constructs identified as important for explaining behaviour.

2.4.2.3. The Integrated Model of Behaviour Change (IM)

According to the IM (Fishbein, 2000; Fishbein et al., 2003) performance of a given behaviour is a function of whether or not an individual has a strong intention to perform that behaviour, whether or not they have the necessary skills and abilities to do so, and finally, whether or not there are environmental constraints which prevent performance of the behaviour. The IM is shown in Figure 2.8 (p. 38)[14]. According to this model, a person's behavioural intention (pink box ‗G') depends on their attitude toward the behaviour (pink box ‗D'), their subjective norm regarding the behaviour (pink box ‗E') and their self-efficacy concerning the behaviour (pink box ‗F') (Fishbein & Yzer, 2003). That is, intention is determined by an individual's feeling of favourableness or unfavourableness toward the behaviour (attitude), their perception of whether others think they should or should not perform the behaviour (subjective norm) and their belief in their own ability to perform the behaviour (self-efficacy).

In the IM, attitudes, norms and self-efficacy are themselves determined by underlying beliefs. Attitudinal beliefs (pink box ‗A') refer to a person's expectations of the outcomes of performing a certain behaviour multiplied by their evaluation of how good or bad those outcomes are. Normative beliefs (pink box ‗B') represent a person's perception of the norms of specific reference groups, multiplied by their motivation to comply with those groups. Control beliefs refer to a person's beliefs about the presence of factors which may facilitate or hinder performance of the behavior (pink box ‗C'). Additional variables which have been used in other theoretical frameworks are not specified as central variables in this model. They are termed *distal* variables (blue boxes) and include demographic variables, personality traits and culture. The IM suggests these variables have an indirect impact on intention and behaviour. Again, the point is that the IM includes these key constructs, drawn from various theoretical models, to provide a comprehensive and potentially best practice framework for examining behaviour.

According to Fishbein, Hennessy, Yzer, and Douglas (2003) ―the IM is a framework for identifying the factors underlying the performance or non-performance of any behaviour clearly defined in terms of action, target, circumstance and time". Fishbein and colleagues have further developed the IM since its inception and diagrammatically, the model they present in their 2003

[14] Discussion of the IM's variables also occurs in Chapter Five with the revision of the conceptual framework and they are further considered in Chapter Eight when the implications of the research findings are detailed.

paper is more detailed than the 2000 version. External variables are renamed as distal variables and contain two additional components (past behaviour and intervention/media exposure). Fishbein and Capella‘s latest published work (2006) offers no new constructs so it appears they are continuing to work with the 2003 model.

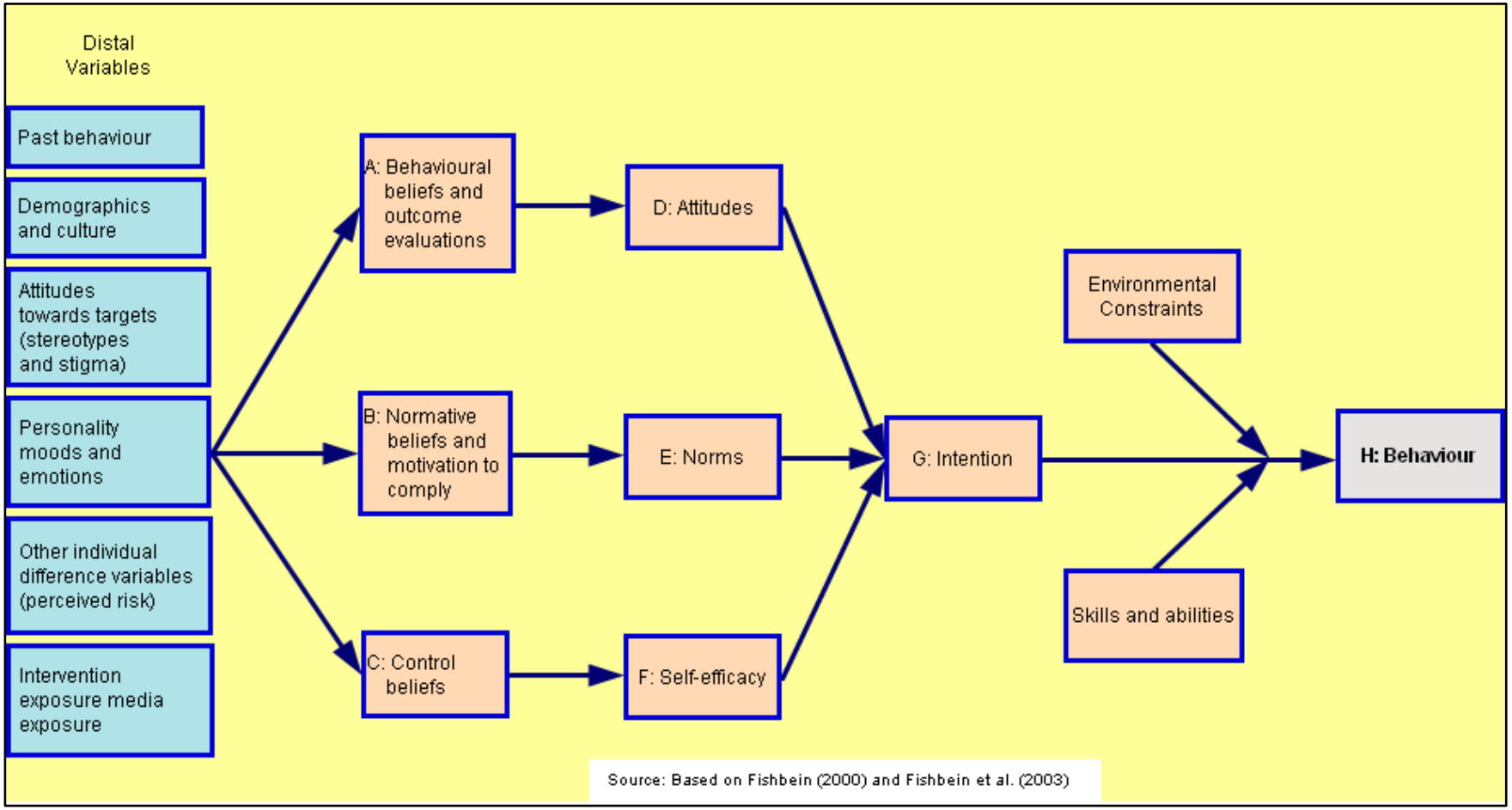


Figure 2.8. The Integrated Model of Behaviour Change (IM)

Using longitudinal data, Fishbein et al. (2003) explored people‘s intentions to engage in health protective behaviour. The study showed the IM‘s attitudes, perceived norms, and self-efficacy variables were able to account for a significant proportion of the variation when predicting intentions and behaviour. They performed poorly, however, when used to predict behaviour of persons with pre-existing high intentions. Essentially, the model‘s variables can influence intention, but cannot explain why one may or may not act on intention. This is an important consideration for my research because the indication is that even when intention to perform (or not) a particular behaviour is high there are other factors which impact on behaviour. Fishbein et al. identifies two important categories of such factors: first, a person requires the skills and abilities necessary to perform the behaviour, and second, the person must be free of environmental constraints which can prevent behavioural performance. These factors are crucial to the understanding of communication processes and behavioural outcomes, which are influenced by underlying beliefs, attitudes, knowledge and abilities.

Fishbein et al. (2003) suggest for those who have strong intentions, but do not act on them, interventions should focus on increasing skills or abilities and removing environmental constraints. This is particularly relevant for school-based health promotions which try to communicate healthy living ideas not only through education, but also by creating school environments consistent with healthy living messages. Inability to access or afford healthy food, for example, is an environmental constraint impacting upon the performance of healthy eating. School tuckshops can remove this constraint by selling low cost healthy food products. Moreover, schools can also develop children‘s skills for healthy eating, for instance, by teaching them how to prepare a low-cost healthy lunch.

Fishbein and Cappella‘s (2006) latest work in health communications applies the IM to cigarette smoking behaviour. Again, the findings of their work suggest theories of behavioural prediction and behaviour change can be used to identify beliefs underlying an individual‘s intention to perform (or not) a given behaviour. These beliefs can then be used to design persuasive communications which attempt to increase the strength of beliefs which promote healthy behaviours and decrease the strength of beliefs which promote unhealthy behaviours. They note, however, that behavioural theories do not assist in the design of effective messages; that is the role of communications theory. Communications theory is necessary for the design of messages which will be attended to, accepted, and acted upon. I can conclude then, that both communications theory and behavioural theory are important for examining communication processes intended to influence health behaviours. For this research, I have thus developed a conceptual framework which includes marketing communications theory and behavioural theory to explore communication processes within school-based health promotions.

2.5. Conceptual Framework

In this chapter I have appraised literature in order to demonstrate that both communications theory and behavioural theory are important for understanding communication processes and behavioural outcomes of school-based health promotions. A contribution of my research is, therefore, the development of a blended models conceptual framework, combining the IMC process[15] from communications theory and the IM[16] from behavioural theory. This blended model offers a unique framework that can be used to explore communication processes within school-based health promotions *and* the likely link between health promotion exposure and children's health behaviour. The conceptual framework, shown in Figure 2.9 on the following page, is used to illustrate the key factors, constructs, or variables to be studied and the presumed relationships among them (Miles & Huberman, 1994).

The upper blue portion of the model represents communication processes within school-based health promotions. Schools (source) seek to influence children's awareness, attitudes and behaviours with respect to nutrition and physical activity (communication objective). Schools design a variety of messages using communication tools such as classroom learning (i.e. personal selling) and organised sports events (i.e. sponsorship marketing). These messages are delivered to children (receiver) through the Health and PE curriculum (message channel). Decoding occurs when the message is received. Communication is effective when the message sent by the school is received and understood by the children. Feedback occurs when the receiver responds to the message. In this case, children may, for instance, give positive feedback to teachers following involvement in an activity which was particularly enjoyable. The outcomes of individual communication interactions might not be considered ‗behaviour change' *per se*, but the combined effect of many interactions over time could, it is suggested, contribute to positive health behaviours among children. Additionally, noise, anything which distorts or disrupts a message, may interfere, creating barriers in the communication process.

[15] The Chitty, Barker and Shimp (2005) model presented in section 2.3.2 (p.19).
[16] The Fishbein (2000; 2003) model presented in section 2.4.2.3 (p. 36).

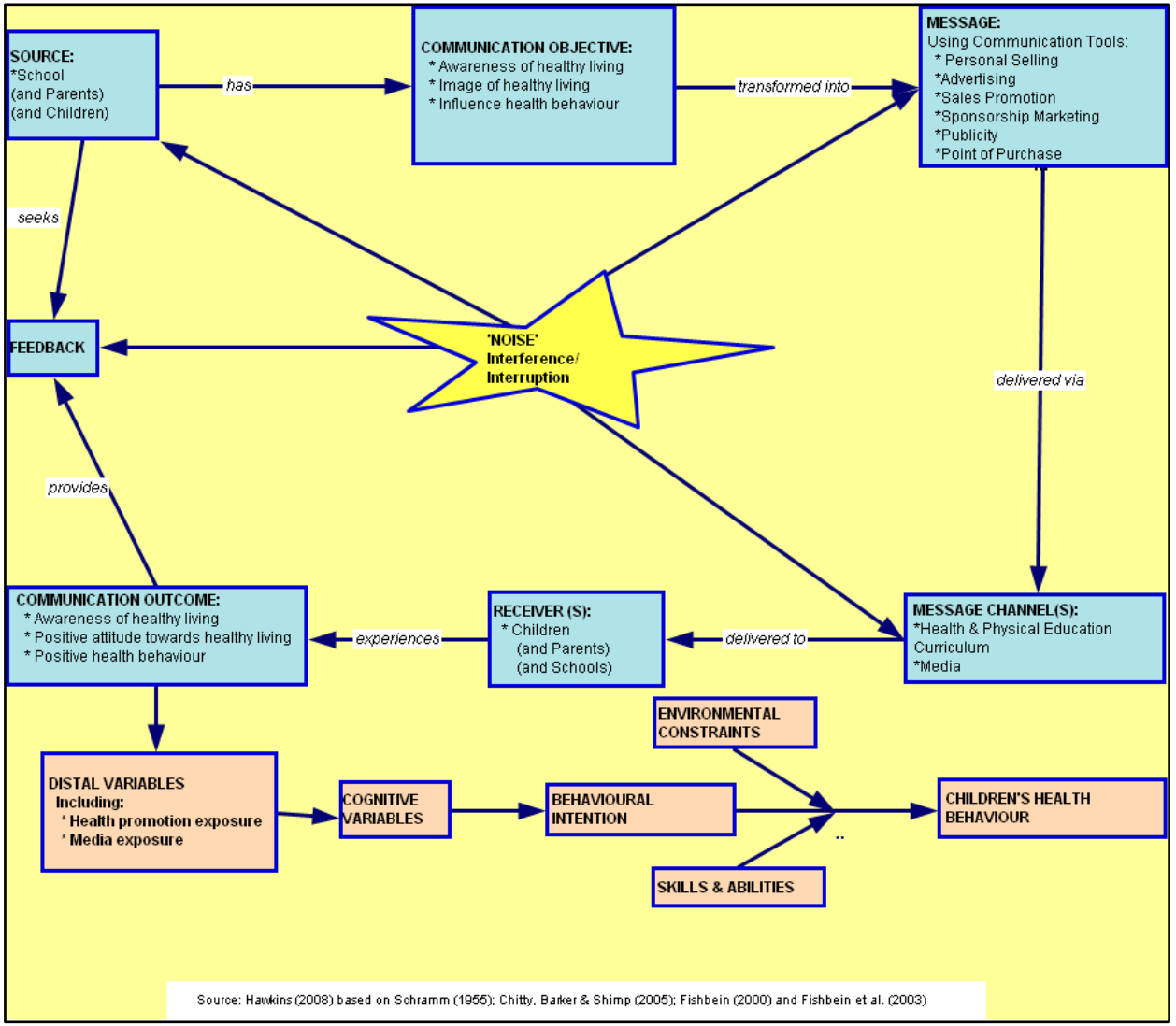


Figure 2.9. Communication Processes within School-based Health Promotions (*a priori*)

As this study is concerned with school-based health promotions, school is considered the primary source of communication, with children as the primary receivers. Schools, parents and children, however, may be both sources and receivers of communication. Parents may, for instance, be teaching children at home about nutrition and physical activity, and children may be informing parents by sharing health promotion messages they have learnt at school. Conversely, discrepancies in what is learnt at school and what is practiced at home may act as ‗noise' thereby interfering in communication processes. Additionally, messages from schools may be targeting parents as well as children. Certainly, some communication regarding health promotion activities is specifically for parents, such as letters notifying parents of upcoming events or requesting consent for children to be involved in such events. Consequently, feedback is also likely to occur between multiple sources and receivers.

The lower pink portion of the model represents the process of changing children's health behaviour. Based on the principles of the IM, this process indicates that the performance of a given behaviour is a function of whether or not a child has a strong intention to perform the behaviour, the necessary skills and abilities to do so and whether or not there are environmental constraints preventing performance of that behaviour. Behavioural intention is determined by cognitive variables; attitudes, norms and self-efficacy. There are also a number of other factors which may indirectly affect behaviour such as demographic variables, personality traits and culture. Included in these distal variables is intervention exposure, which encompasses the health promotion messages children are exposed to during communication processes. Overall, because the proposed framework combines leading communication and behavioural theories it is intended for this thesis to be a suitable and useful model for exploring communication processes within school-based health promotions.

2.6. Summary

In this chapter I have shown school-based nutrition and physical activity health promotions can be viewed as social marketing efforts, whereby marketing theory is used to promote healthy behaviours. In New Zealand, schools are encouraged, through the Ministry of Health (2003a, 2003b, 2004b) HEHA strategy, to implement promotions targeted at improving nutrition and increasing physical activity in order to reduce obesity among children. Research on school-based health promotions, however, often reports disappointing results and indicates a range of factors which could contribute to the success of school-based promotions. Personal success factors include individual motivations, relevance of the behaviour change, judgements of assets or resources to make the behaviour change and willingness to overcome barriers. Environmental change, such as in the availability and accessibility of food is also important, as are social and cultural norms, and community assets and empowerment. Success factors for schools include: professional development

for staff, high levels of commitment and communication among stakeholders, the ability to allocate sufficient time to health promotion processes and support in terms of funding, partnerships and resources.

Research regarding the Health Promoting Schools (HPS) initiative identifies similar success factors, indicating support, involvement from key stakeholders, training, a clear understanding of the initiative and high levels of commitment are important. In other research, problem areas were identified for HPS. Of relevance to this study is the notion of communication difficulties among HPS facilitators and their school community, and the need for a comprehensive approach to programme delivery. In the course of this review, no studies were found which focus on communication processes within school-based health promotions. Research is, therefore, needed to examine how communication occurs among stakeholders, how health promotions are delivered and the impact of communication processes upon the success of health promotions.

I have reasoned that marketing communications principles could be applied to communication among those involved in school-based health promotions. Integrated Marketing Communications (IMC) is most commonly applied in business, but school-based nutrition and physical activity health promotions could operate under the same principles... ―t persuade by means of communication, to affect behaviour, not just attitudes, and to start with customers or prospects and then work backwards to develop effective communication" (Kitchen & De Pelsmacker, 2004, p. 7). The key to IMC is integration of communication efforts. An integrated strategy could lead to shared understanding of health promotion elements (such as objectives, processes, messages, resources, expectations and outcomes) among members of the school community. Such a coordinated approach to health promotion delivery would, thus, be highly likely to result in positive impacts on health promotion implementation, exposure and subsequent behaviour.

Behavioural theory was also reviewed in this chapter so that behavioural outcomes of school-based health promotions could be examined in the research. Behavioural theory offers frameworks to explain and better understand health behaviours. The most recent social cognition model, the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein et al., 2003), is identified as one which could explain children's health behaviour as a result of exposure to school-based health promotions. The IM is a comprehensive model incorporating key components of leading perspectives in behavioural theory. Based on the IM, performance of a given behaviour is a function of whether an individual has a strong intention to perform the behaviour, necessary skills and abilities to do so and whether there are environmental constraints preventing performance of the behaviour.

We now know there is need for research exploring communication processes and behavioural outcomes of school-based health promotions. While there are theoretical frameworks which focus on either communication processes *or* behaviour-change, none of the literature considers both communication *and* subsequent behaviour. I have, thus, blended marketing communications theory and behavioural theory in a conceptual framework to illustrate the flow of health promotion communication between school stakeholders and the (indirect) link between communication (intervention exposure) and children‘s health behaviour. This conceptual framework indicates the key constructs to be examined in the research. In the following chapter the research procedures used to conduct the study are presented.

CHAPTER THREE
RESEARCH PROCEDURES

3.1. Chapter Overview

This chapter outlines the research procedures used in this study. The study explored communication processes within school-based health promotions using a case study research design (Yin, 2003). Six primary schools were involved, each comprising one case. Participants were school stakeholders: principals, teachers, parents and children. The research was approved by the Massey University Albany Human Ethics Committee (Protocol No. MUAHEC 04/087).

Multiple data collection methods were employed. School curriculum and health policy documents were used to profile each school case. Brochures, pamphlets and information packs relating to specific health promotion activities were also reviewed[17]. Interviews regarding selection, implementation and outcomes of school-based health promotions were conducted with principals and teachers. A self-completion questionnaire was distributed to parents, focusing on parents' perceptions of nutrition and physical activity issues, and the influence of school-based promotions on their children's diet and exercise behaviours. Focus group sessions were conducted with children to examine the impact of school-based promotions on their perceptions of health, nutrition and physical activity.

All interviews and focus groups were audio-taped and transcribed. An important contribution of this thesis is that the difficulties of the transcript reviewing process are documented to inform other researchers intending to use such procedures. Transcripts were analysed following the coding procedures and identification of themes detailed by Miles and Huberman (1994). This process was completed using the QSR N6 qualitative data management software package. The returned questionnaires from parents were coded and analysed using SPSS (SPSS Statistics), a data analysis software package.

3.2. Research Design

3.2.1. Case Study Approach

Case study research is a common form of qualitative inquiry that is defined simply by the existence of an interest in that which is to be studied (i.e. the phenomenon to be studied, be it an individual, an organisation, or even a process, is _the case') (Stake, 2005). Indeed, case studies are frequently the preferred method of inquiry when _how' and _why' questions are being posed, if only because the investigator has little control over events. Moreover, the focus of case studies is typically concerned with a contemporary phenomenon situated within a real-life context (Yin, 2003).

[17] These were materials either publicly available or distributed to schools by service providers such as the Heart Foundation and Sport and Recreation New Zealand (SPARC) etc.

The following discussion considers these matters by applying them to the question of how and why communications processes impact upon school-based health promotions and in doing so, justifies the use of case studies in this research. Table 3.1 below illustrates the process of developing a research question and objectives.

Table 3.1. The Translation of Initial Research Questions into Research Objectives

<table>
<tr><td colspan="3">INITIAL QUESTIONS</td></tr>
<tr><td>How is health promotion information communicated among the school community?

Why might stakeholders perceive health promotions differently?</td><td>How might communication impact upon selection and implementation of health promotions, children's exposure to health promotions and health promotion outcomes?

Why might a school have difficulty implementing health promotions?</td><td>How are health promotions communicated among Health Promoting Schools (HPS) stakeholders compared with stakeholders involved in health promotions at non-HPS schools?

Why might the HPS model be more or less effective in influencing stakeholder attitudes and behaviours than other school-based health promotions?</td></tr>
<tr><td colspan="3">PROPOSITIONS (stemming from initial questions)</td></tr>
<tr><td colspan="3">1. Stakeholders' perceptions and expectations of nutrition and physical activity health promotions are likely to have a significant impact upon the successful selection and implementation of those promotions.
2. Health promotions are most likely to meet expectations when they have been selected with those expectations in mind.
3. Implementation of health promotions is likely to be successful when stakeholders have shared perceptions of promotions and the expected outcomes.
4. How health promotion information is communicated may affect whether stakeholders buy-in, what strategies they adopt, how promotions are implemented and what effect this has on children's health knowledge, attitudes and behaviour.
5. There is likely to be factors which enhance or inhibit communication processes, affecting the implementation of health promotions, children's exposure to those promotions and their subsequent health behaviour.
6. A distinguishing feature of the HPS model, compared to other health promotion approaches, is that it claims to be holistic in nature, involving a number of stakeholders including teachers, parents, children and the wider community (Ministry of Health, 2001). Consequently, communication of health promotions among HPS communities may be more effective than communication among non-HPS communities.</td></tr>
<tr><td colspan="3">OVERARCHING RESEARCH QUESTION (stemming from the propositions above)

How might communication processes within school-based health promotions impact upon the implementation of those promotions, upon children's exposure to promotions and upon the outcomes of promotions?</td></tr>
<tr><td colspan="3">RESULTANT RESEARCH OBJECTIVES</td></tr>
<tr><td>1. To explore communication processes within school-based nutrition and physical activity health promotions by analysing school stakeholders perceptions and expectations of the promotions in which they are involved.</td><td>2. To identify factors which may enhance or inhibit communication processes within school-based nutrition and physical activity health promotions.</td><td>3. To explore, in a qualitative manner, communication approaches used by Health Promoting Schools (HPS) as opposed to those used by non-HPS and the impact of these approaches on health promotions.</td></tr>
</table>

With respect to Table 3.1, the research focus for this study emerged from ‗how' and ‗why' questions relating to communication processes and school-based health promotions. Analysing these questions resulted in the development of a series of propositions which collectively enabled the framing of an overarching research question and the nomination of resultant research objectives. Specifically, the upper section of the table nominates a number of preliminary questions I developed in the early stages of the study. These heuristic questions became potential starting points and had stemmed from my previous study in related fields (Hawkins, 2003) as well as from perusing articles on nutrition, physical activity and obesity related issues which featured regularly in consumer media.

During the initial literature review process, propositions relating to the preliminary questions were developed (as presented in the mid-section of the table). A critical examination of these questions and propositions ultimately led me to the framing of an overarching triple-pronged research question for this study, namely, *how might communication processes within school-based health promotions impact upon the implementation of those promotions, upon children's exposure to promotions and upon the outcomes of promotions?*

The lower section of the table presents the derivative but linked research objectives which were framed in order to address the overarching research question. The link between the propositions, research question and objectives is important; the propositions underpin the research question and objectives and thus define the scope of the study by directing attention to areas which ought to be examined (Yin, 2003).

Along with focusing on ‗how' and ‗why' questions, this study also fulfils Yin's (2003) criteria of being focused on contemporary events. This means that the study did not require control over behavioural events. Instead, as was the case with this investigation, the case study method was concerned with meaningful characteristics of real life events (Yin, 2003) which, in this study, comprised the workings of school-based health promotions. Hence, communication within a series of six real-life social contexts was explored. Specifically, this meant that communication processes, as well as the selection and subsequent implementation of health promotions were critically examined. Plus exposure to health promotions experienced by children and their subsequent health behaviours were explored. Moreover, linkages between these matters (implicit as well as explicit) were investigated for such is the nature of interpretative inquiry.

The environmental context of each of the six schools was carefully considered because factors such as school size and decile rating, the degree of support received from staff and other stakeholders, and the availability of resources, were considered likely to impact upon health promotions. In contrast to experimental studies in which behaviours are typically manipulated, children's nutrition and physical behaviours were not controlled in this research. Instead, this

investigation focused specifically on communication. It studied how communication processes, or in some instances the absence of communication processes within health promotions, might impact (manifestly and/or latently) upon implementation practices and behavioural outcomes.

This focus and emphasis on communication within health promotions was not only informed by having critically examined reviewed literature, but also by a realisation that within schools, communication as a process is meant to intentionally influence children's health behaviours rather than manipulate them in an experimental fashion. This meant that although children's behaviours were not measured or manipulated, they were able to be documented as critical instances of behaviour. Acknowledged critical instances, therefore, were able to be viewed as implicit outcomes consequent to children having been exposed to health promotions.

This study explored communication processes within school-based health promotions using six school cases. Each school, as noted previously, became a designated case because, as Yin (2003) notes, case study design may be singular or multiple. This means that while a single case design focuses on one case, a multiple design focuses on six to ten cases. This study, therefore, employed a multiple case design which is consistent with the rationale that multiple case sampling adds confidence to findings (Miles & Huberman, 1994).

Cases may, by their very uniqueness, produce similar or contrasting results. Results, however, are typically considered to be more robust if a finding in one setting also applies in a comparable setting, but not (necessarily) in a contrasting setting. In this study, schools were invited to participate based primarily on two criteria: the decile rating[18] of the school and whether or not the school operates as a Health Promoting School (HPS). Practically, this meant that comparable as well as contrasting schools were chosen in order to produce comparable and contrasting results. This strategy enabled analysis of communication processes within school-based health promotions across school communities. While the results of a case study research design cannot be generalised to a larger population, generalisations can be made from one case to the next by matching underlying concepts (Miles & Huberman, 1994). Identifying underlying themes is part of the case analysis (as discussed in section 3.5.2 of this chapter, p. 64). Emerging themes were developed and evolved as each case informed the overall study.

Case studies can, of course, be based on any mix of quantitative and qualitative evidence (Yin, 2003). This means that data are collected from multiple sources including discussions with participants, direct observation and analysis of written documents (Schloss & Smith, 1999). In this research, both qualitative and quantitative data were collected from school staff, parents and

[18] Decile ratings (which are actually stanine (STAndard NINE)) are an indicator for socio-economic status and are discussed in section 3.2.3 of this chapter (p. 49).

children. Data were gathered through interviews, focus groups and by conducting a survey (as discussed in section 3.4 of this chapter, p. 58). Moreover, multiple sources and methods of data collection were used in order to cross-examine information and identify commonalities or discrepancies among responses (i.e. triangulation). It is important to note that data triangulation provides a means for confirming or corroborating given or disclosed information (Schloss & Smith, 1999). In this study, analysis of differing perspectives of those involved in health promotions was used to map how information is communicated among school stakeholders and to determine whether or not a shared understanding of health promotions had been achieved. Additionally, secondary evidence in the form of health policy, school curriculum and health promotion materials provided documentary and contextual information about the schools and health promotions operating within them (as discussed in section 3.5.1 of this chapter, p. 62). Data were analysed using the conceptual framework developed through the literature review process (as discussed in Chapter Two, section 2.5, p. 40).

3.2.2. Units of Analysis

The unit or units of analysis refers to the focus of the research (Patton, 2002) and logically, this means that the scope for the range and kinds of units of analysis is broad. Units of analysis, for instance, can include individuals, groups, programmes, projects, people who share a culture, neighbourhoods, communities, critical incidents, events, and particular days of the week among others (Patton, 2002). In this study, the unit of analysis was communication processes within school communities relating to school-based nutrition and physical activity health promotions. Analysis focused on school case studies and any variation across these cases. As noted previously, six primary schools were involved in the study which is consistent with Yin‘s (2003) definition of a multiple case study design involving six to ten cases. More importantly, for this study the research process reached saturation when the information collected from new cases mirrored patterns discerned within previous cases (Alasuutari, 1995). It was concluded, therefore, especially given that this is a qualitative study and not a statistical piece of work, that six cases were sufficient and that additional cases would be unlikely to yield new information. In qualitative research a case is bounded by its own uniqueness i.e. a case is a case is case...

3.2.3. Selection of Participating Schools

The participants of this research were school stakeholders: principals, teachers, parents and children. Data relating to schools is publicly available from the Ministry of Education, enabling easy access to information necessary for selecting and contacting schools. Schools considered for this study were contributing primary schools, which cater for children in Year 0 to the end of Year 6 (ages 5-11), and full primary schools, which additionally include children in Years 7 and 8 (ages 11-13). Of these, only state schools were included as they afford a larger sampling population.

Moreover, state schools are co-educational (mixed gender) at primary level and lessons are based on the New Zealand Curriculum. Additionally, *Kura Kaupapa* Māori schools (in which teaching is in the Māori language) and schools for special needs students were not included. This exclusion was arbitrary but was informed by practicality; namely, I do not speak Māori and it was reasoned that learning and participation in Health and Physical Education (PE) was likely to differ for special needs students.

For this study, schools were sampled from the Auckland region which consists of Auckland, North Shore, Waitakere and Manukau cities, along with Papakura District and Rodney and Franklin Districts[19]. According to the Ministry of Education Directory of Educational Institutions (2007a), there are approximately 500 schools in Auckland. Auckland is an ideal locality from which to collect data as it is the largest urban area in New Zealand. Furthermore, approximately one third of the country's population live in Auckland (Statistics New Zealand, 2007). From the total population of 500 schools in Auckland, approximately 280 were eligible for inclusion in this study based on two selection criteria: decile ratings and whether or not the school operates as a HPS.

The two selection criteria were, hence, used to generate a total of six cases so that the research objectives of the study (as discussed in section 3.2.1 of this chapter) could be met. Paying attention to decile ratings was important for ensuring different socio-economic sectors were represented and for, thus, being able to obtain different perceptions of health and health promotions across broad decile bands (objective one). Equally, sampling decile bands enabled a comparative investigation of factors which enhance or inhibit communication processes within health promotions (objective two). The second characteristic of whether or not schools operate as a HPS was important for exploring communication approaches used by HPS with those used by non-HPS and addresses the third objective of the study.

Decile ratings are determined by the Ministry of Education and indicate the extent to which schools draw students from low socio-economic communities (Ministry of Education, 2006). Based on census data, five socio-economic factors are considered in the calculation of decile ratings: household income, occupation (of parents), household crowding, educational qualifications (of parents) and income support received[20]. Schools are allocated a decile rating ranging from one, representing communities of the lowest socio-economic status, to ten, representing communities of the highest socio-economic status. Note that the Ministry of Education (2006) acknowledges decile ratings do not indicate the overall socio-economic mix of a school. While this suggests the

[19] A map of the Auckland region can be found at http://www.newzealand.com/travel/library/o86143_23.pdf
[20] For further information on the calculation of deciles see "How The Decile Is Calculated" (Ministry of Education, 2006).

classification of schools into deciles may be imperfect, the system is used throughout New Zealand, meaning any shortcomings are experienced by all schools.[21]

A second criterion for school selection was whether or not they operate as a HPS. To identify and select HPS for the study, I obtained a list of all HPS in Auckland from the initiative's chief coordinator[22]. At that time (early 2004), there were approximately 155 HPS in Auckland. Using the school selection criteria discussed above (i.e. as outlined in the first paragraph of this section, 3.2.3), approximately 100 HPS were eligible for the study. Regional coordinators working in each Auckland city were asked to recommend potential schools which I could then invite to participate in the research. Staff at the Ministry of Health and Auckland District Health Board also advised me about suitable potential schools and assisted me with contacting them. Schools were also invited to participate based on referrals from schools already involved in the study. Referrals, although an unexpected feature in the school selection procedures, proved the most successful method of recruitment. In addition to decile ratings and HPS criteria, characteristics, such as the number of staff and students, ethnic composition of students, location and physical surroundings were also considered as possible factors which might explain the differences in health promotion at each school.

There were three schools which chose not to participate in the study, plus numerous others which did not respond to the initial invitation to participate. I, therefore, continued to invite schools to participate until the sample of six was achieved. This sampling process may have introduced bias to the study, as schools which chose not to participate may have been illuminative cases (but equally, they may not have been). To reduce the number of schools which declined to participate, principals were briefed about the study and were assured that the time and effort required from their

[21] Anecdotal evidence from school staff suggests the decile ratings allocated to their schools do not clearly reflect the socio-economic status of all members of their community. A decile ten school, for instance, classed as one with a community of high socio-economic status families, may in fact have some children attending whose families' socio-economic status is much lower. However, the Ministry of Education appear to be working towards improving the calculation of deciles, in order for the decile ratings of schools to better reflect the socio-economic position of their communities. (For details of these changes see Education Circular 2007/16, Ministry of Education, 2007).

[22] I did not know any people involved in HPS until I began this research. HPS contacts were made through attendance at conferences, 'snowball' referrals from colleagues and friends, and by telephoning and emailing people identified through web searches. Information regarding persons involved in HPS may be obtained upon request.

school would be minimal. Additionally, a donation was offered to the school for their participation[23]. When a school declined to participate, a school with a similar decile rating was approached instead. Given that the objective was to achieve uniquely bounded cases, this did not affect the sample's representativeness. To gain informed consent to study each school, approval for the project was sought from the principal and from the Board of Trustees (BOT). Any queries they had regarding the project were discussed prior to commencement. Schools choosing to participate in the study were then invited to approach the study as a three-phased research programme. Ethical considerations of the research are discussed in the following section and then the research programme is discussed in detail.

3.2.4. Ethical Considerations

This research was approved by the Massey University Albany Human Ethics Committee (Protocol No. MUAHEC 04/087). The study was thus conducted in adherence to the guidelines set by the committee in order to abide by ethical principles[24]. Ethics approved information sheets, consent forms, interview schedules and the parent questionnaire are included in Appendix B (p.237).

Tolich and Davidson (1999) suggest most codes of ethics can be reduced to five basic principles. First, do no harm. This means participants should not be physically harmed during research, but also that researchers should be mindful of how the information collected from participants is used or may expose participants to risk. This is important when participants are asked, for example, to divulge information about deviant opinions or behaviours which could cause them psychological harm.

The second principle is that all participation needs to be voluntary (Tolich & Davidson, 1999). Research requires participants to give up their time and reveal potentially sensitive information about themselves. A core concept of research ethics is thus the notion that imposing burdens on research subjects cannot be justified by the benefits of the research or the promotion of knowledge (Wilkinson, 2001). Philosophically, the idea is that of ‗respect for persons' (Wilkinson, 2001, p. 15), meaning people have rights and if those rights are violated there is a lack of respect for

[23] A donation was recommended by university colleagues as an acceptable gesture of gratitude to each school for participating in the study. The donation/koha, presented to each principal upon completion of data collection, was given as a contribution to health and physical education (PE) within the school and could be used, for instance, to purchase sports equipment or health resources. In most cases the principals indicated what they intended to use the donation for. Two principals declined the donation. It was considered that the offer of a participatory donation did not introduce any research bias (regardless of whether it was accepted or not) as the donation went to the school as a whole and not to individual participants. The offering of donations was documented in the ethics application approved by the Massey University Albany Human Ethics Committee.

[24] The Massey University Human Ethics Committee code of ethical conduct for research, teaching and evaluations involving human participants is available at: http://sitemap.massey.ac.nz/massey/research/ethics/human-ethics/code/code.cfm

their personhood. The notion of voluntary participation is, therefore, closely related to the requirement of informed consent. Essentially, this means that when conducting research with people it is important to ask for their permission first. Prospective research participants must be fully informed about the procedures and risks involved in research and must give their consent to participate.

The third ethical concern Tolich and Davidson (1999) note is that researchers must preserve anonymity or confidentiality of participants. Anonymity is achieved when participants remain anonymous even to the researchers themselves, whereas confidentiality is the assurance that identifying information will not be disseminated publicly. Anonymity is a stricter standard for protecting the identity of participants than confidentiality, but it can be difficult to guarantee, and in some research situations, such as interviews or focus groups, participants cannot be anonymous.

Tolich (2001) highlights that the smallness of population may in itself be an ethical concern for protecting the privacy of research participants in New Zealand. Tolich provides examples of school-based research in New Zealand in which no confidentiality (or anonymity) was maintained because it was possible to deduce who the informants were. Essentially, Tolich questions whether or not it is possible to discuss any special characteristics of schools in New Zealand without (inadvertently) disclosing their identity. He argues that the assurance of informed consent and confidentiality for informants does not guarantee the school itself can be protected from harm. As is shown in Table 3.2 on the following page, these are key considerations for this research which involves schools.

Avoiding deceit is another basic ethical principle (Tolich & Davidson, 1999). This means that it is unacceptable to be untruthful in order to gain access to data or people. Researchers should disclose to participants their purpose and for whom the research is being conducted. There are situations in which deceit may be justified for methodological reasons, but Tolich and Davidson (1999) highlight that ‗covert' research is typically criticised and participants must be debriefed after the event.

The final principle is to analyse and report data faithfully (Tolich & Davidson, 1999). This means that it is important as a researcher to share any methodological weaknesses or unexpected changes to the research process. Doing so does not discount the quality of the work, but rather highlights the realities of conducting ‗real world' research. Indeed, one of the four tests[25] commonly used to judge the quality of empirical social research is reliability (Yin, 2003), which involves

[25] The four tests are: construct validity, internal validity, external validity and reliability (Yin, 2003). These tests are discussed in detail in section 3.6 of this chapter (p 65).

demonstrating whether or not the procedures of a study can be repeated to produce the same results. It is, therefore, important the research be reported faithfully in order for that to happen.

Table 3.2 on the following page shows the ethical considerations for this research. The table shows the specific considerations pertaining to each of the five principles outlined above and indicates how these considerations were addressed. Specific details of the procedures for school staff, parents and children are provided in section 3.3 of this chapter (p. 56).

Table 3.2. Addressing Ethical Considerations

Ethical Principle	Ethical Considerations for this Research	Procedures to address Ethical Considerations
Do no harm	Ensuring no physical or psychological harm to participating principals, teachers, parents and children.	Physical harm was unlikely as there were no experiments or invasive procedures. Psychological harm was also unlikely, because the questions asked of the research participants did not pertain, for instance, to deviant behaviours or require opinions on controversial issues. Informed consent was, however, required for participation and confidentiality was assured to minimise any concerns participants may have had regarding the information they provided.
All participation needs to be voluntary	Ensuring participation by each school as a whole was voluntary. Ensuring participation by principals, teachers, parents and children as stakeholders of those schools was also voluntary.	Letters were sent to school principals inviting them to participate in the research and this offer could be accepted or declined without negative repercussions. Prospective participants were given information sheets about the study prior to their involvement and consent was required to participate. Consent was gained in writing for principals and teachers and consent for children to participate was provided by parents/caregivers. Parents did not need to complete consent forms for themselves as they were surveyed using a self-completion questionnaire. Parents who completed and returned their questionnaire were, thus, considered to have consented to being involved in the research. Schools were also asked permission for the involvement of a research assistant during children's focus groups.
Preserve the anonymity or confidentiality of participants	Protecting the identity of each school as a whole and the identities of the principals, teachers, parents and children as research informants.	Schools are identified only as A, B, C, D, E and F to ensure confidentiality of the schools' names. Specific school details are presented as approximations (such as the descriptive demographic data presented in Chapter Four) in order to reduce the possibility that the school might be identifiable. Additionally, the Education Review Office (ERO)[26] reports from which the information is sourced are *not* listed in the references section of this thesis. No person's names are disclosed in this thesis or any publications resulting from this research. Where names are attributed to quotes (as in Chapters Seven and Eight) pseudonyms are used. Research assistants, who participated in either the data collection or data entry procedures, were required to sign a confidentiality agreement that they would not divulge any information disclosed to them during the study.
Avoid deceit	Ensuring research participants were aware of the purpose of the research.	All participants were informed that the research pertained to school-based health promotions and no information was purposefully withheld from participants. Participants were also informed that the research was a project conducted for the attainment of a doctoral degree and did not serve any commercial purpose.
Analyse and report data faithfully	Ensuring accuracy in the data and the reporting of the study's findings.	Transcripts were reviewed by participants so that they could confirm the transcript was an accurate account of their interview. As is discussed in section 3.4.1 Qualitative Interviewing (p. 58), this process became problematic and was discontinued. The important point is that this experience is documented as part of the research procedures.

[26] The Education Review Office (ERO) is a government department whose purpose is to evaluate and report publicly on the education and care of students. The ERO reviews schools and early childhood education services every three years (Education Review Office, 2008).

3.3. Research Programme

The research was divided into three phases, each one concentrating on different stakeholders involved in school-based health promotions. In the first phase principals and teachers were interviewed. The second phase involved a survey of parents and the third comprised focus groups with children. The three-phased research programme used in this study is summarised in Table 3.3.

Table 3.3. Summary of Research Programme

Phase	Participant	Data Collection Method	Approximate Duration	Procedures
1	Principal Teachers	Interview Group interview	60 minutes for each	Interviews audio taped and transcribed.
2	Parents	Self-completion questionnaire	15 minutes	Questionnaires distributed to parents and returned in a reply paid envelope.
3	Children	Focus group	30-45 minutes, depending on the age of the children and the school timetable.	Interviews audio taped and transcribed.

The first phase consisted of an interview with the principal and an interview with teachers. Principals were interviewed individually; teachers were interviewed collectively. Interviews focused on the promotion of health, nutrition and physical activity within the school. The duration of each interview was approximately one hour.

Teachers were approached by the school principal to participate in a group interview. Participation was based on availability and a willingness to be involved. Participation was, therefore, a matter of self-selection and voluntary participation[27]. Although biased responses may have resulted (e.g. those with strong views may have felt more inclined to participate), efforts were made to encourage participation from all available teachers. Interviews, for example, were scheduled around the most suitable dates, times and venues for potential participants, with light refreshments provided as a token of appreciation. To promote participation, I also informed school staff of the academic purpose of the study and gave assurance that their personal details would remain confidential. In accordance with the ethics approval granted for this research, publications resulting from the study do not divulge names of any individual participant, or the school names. Furthermore, I stressed to participants that the study was concerned with communication and school-based health promotions. It was not my intention to form judgement, or evaluate in any way, the teaching abilities of the school staff.

[27] I am unable to calculate participation rates among teachers as I do not know how many teachers were invited to participate at each school (as this was done by the principal).

The second phase of the study comprised a survey of parents whose children attend each school. The survey was aimed at obtaining parents' perceptions of nutrition and physical activity issues and the influence of school-based health promotions on their children‘s diet and exercise behaviours. A questionnaire, with a covering letter from the principal and an information sheet, was sent home (with the child) with the school newsletter. A reply envelope was provided for the questionnaires to be returned. These arrangements were tailored for each school as required. In some cases, schools recommended that completed questionnaires be returned directly to the school rather than asking parents to mail their response to the university. In all cases, specific details were finalised with each principal and informed consent was a hallmark of the procedure.

The final phase of the study involved focus groups with children. The aim of these group sessions was to determine children‘s views on health and their perceptions of nutrition and physical activity. Children were selected using each school roll. The samples include children from Years 3-8, aged between seven and thirteen. Children under the age of seven were excluded as they were unlikely to have the cognitive maturity or verbal fluency required for the focus group discussions. Details of the focus group selection process were finalised once approval was gained from the school.

Formal written parental/caregiver consent was required before research with the children could proceed. In most cases, principals chose entire classrooms of children whose parents/caregivers were then sent a consent form, together with a covering letter and an information sheet outlining the details of the study. This was often combined with the distribution of the parent questionnaire. Parents of the children who had been selected were sent a covering letter, an information sheet and both a questionnaire and a consent form; all other parents were sent only a covering letter, an information sheet and a questionnaire.

Parents were informed there would be no ramifications for not permitting their children to participate. The information sheets provided to parents stressed that only aggregate results of the study would be used and no individual child or their parent/caregiver would be identified. To ensure the information needs of ethnic groups were catered for, advice was taken from the principal of each school on appropriate languages to be used in communication with parents/caregivers. In this study, alternative translations of the consent form and covering letter were not deemed necessary by any of the schools. Given the sensitivity of this phase of the research, details were discussed with the principals in order to establish that the research methods were considered by each school to be appropriate for them, e.g. at Schools E and F a box was located in the school foyer into which survey forms could be returned by parents. At other schools slight variations of this occurred, but to all intents and purposes the methods used across all schools were consistent.

While focus groups were taking place, alternative classroom activities were organised by teachers for children whose parents/caregivers either did not return a consent form, or did not wish their children to participate in the research. This ensured no child was ‗left out'. The exact number of children who were not permitted to participate is unknown, largely because the process of collecting returned consent forms and organising children into focus groups was managed by the schools. Additionally, class rolls may have changed during the research period, or students may have been absent either on days the consent forms were distributed or days the focus groups were conducted. In working with the schools, no teachers reported any negative impact on students, either those who participated or those who did not.

3.4. Data Collection Methods

3.4.1. Qualitative Interviewing

The first phase of this research involved interviews with school principals and teachers (as discussed in section 3.3 of this chapter, p. 56). Qualitative interviewing, using in-depth, semi or loosely structured interviews is one of the most commonly recognised qualitative research methods (Coolican, 1999; Mason, 2002). The purpose of in-depth interviewing is to gain a heightened understanding of the experiences of others and the meaning they make of those experiences (Seidman, 1991). In school settings, staff expectations, perceptions and experiences with health promotion vary. Principals, for instance, may be involved in health promotion activities at a management level (e.g. authorising the introduction of a new resource), but may not have the ‗hands-on' involvement of teachers (e.g. implementing the resource with children on a daily basis). By comparison, health coordinators or curriculum team leaders are likely to be heavily involved in the planning and implementation of health promotions (e.g. investigating new resources and reporting possible alternatives to senior management). In-depth interviewing is, therefore, an ideal method to gain understanding of the differing roles and experiences of staff involved in health promotion.

The use of in-depth, semi structured interviews allowed me to begin with starting points or preliminary themes for discussion and this involved using a flexible interview structure (Mason, 2002). Throughout the interviews, I modified questions on the basis of interviewees responses (Schloss & Smith, 1999). This enabled ‗on the spot' decisions about how to cover various topics and how to best phrase the questions to be asked (Coolican, 1999). Interviews flowed naturally, allowing interviewees to talk freely about topics of interest or importance to them (Schloss & Smith, 1999). Consequently, unexpected themes emerged (Mason, 2002) and I was able to follow up on select aspects of the dialogue as needed (Coolican, 1999).

School principals were interviewed first and individually. As noted above, individual interviews were most suitable for principals as their experiences differ significantly from teachers who work closely with children on a daily basis. As head of their school, the principal provided a unique view of health promotion at a macro level. Teachers were interviewed second and in groups. This method was found to be effective because teachers had shared or similar experiences and were able to offer micro level insights on their day-to-day interactions with children and health promotions. Moreover, the group interview approach generated richer and more complex information than individual interviews, as comments from one teacher often prompted responses from others thereby creating a snowballing effect. There were also practical considerations for the selection of the group interview method, namely this minimised the amount of time and effort required by the school. It seemed unlikely that schools would be willing or able to commit to several hours of individual teacher interviews.

Children participated in focus groups. Discussions took place with eight to ten children of approximately the same age and with roughly equal numbers of girls and boys. The purpose of grouping children of a similar age was to broadly ensure that children in each group had similar cognitive and communicative capabilities. The focus group method was reasoned to be most suitable for children because individual interviews were considered potentially daunting and difficult. Aside from creating ethics approval complications it was felt that individual interviews would require lengthy discussion with each child (Morgan, 1997). Moreover, it was unlikely children would feel comfortable in a one-on-one setting with an unfamiliar adult (i.e. me, the researcher), and nor would they necessarily be able to engage in any one topic for an extended period of time. To minimise any concern children may have had, groups were typically escorted to the focus group venue by a school staff member. The staff member briefed the children about the session and introduced the research assistant (when present) and I to them.

Use of focus groups allowed children to speak freely, with interaction producing rich data (Morgan, 1997). Naturally flowing dialogue was important as I was also uncertain about the exact questions that needed to be asked (e.g. choice of age appropriate wording) in order to achieve meaningful responses (Morgan, 1997). The major potential weakness of the group interview and focus group methods was bias of both group dynamics and my influence as researcher.

The interview schedules for the first two phases of this research were developed from issues identified in academic literature and assertions made in non-academic literature regarding school-based health promotion and nutrition, physical activity and obesity. Interviews were scheduled in advance and conducted in a setting of the participants‘ choosing. Decisions regarding the interview environment were the responsibility of the school principal. In particular, the location of the children‘s focus groups was selected by either the school principal, or by a member of the school

staff (e.g. the classroom teacher). The venues used for the interviews and focus groups were ‚private' and comfortable, in order to minimise possible disruptions. The principals' interviews were conducted in their offices; teachers' interviews and children's focus groups were conducted in the staffroom, a meeting room, or the library.

Interviews with school staff were approximately 60 minutes in duration, a decision informed by my discussions with principals who proposed that 60 minute interviews were most suitable. Duration of interviews, however, varied. In some cases interviews were shorter (40 minutes), while others were much longer (90-120 minutes). Children's focus groups were of shorter duration (30-45 minutes), based on recommendations by principals. Scheduling of groups largely revolved around fitting into the school timetable. Additionally, school staff perceived children would unlikely remain attentive beyond 45 minutes.

Field notes were taken during interviews and focus groups. These notes comprised written records of what was seen and heard during the interview, including initial perceptions of participants' responses (Schloss & Smith, 1999). Audio-taping equipment was also used to assist with data capture. This reduced the need for comprehensive field notes. However, detailed notes were constructed later by reviewing tapes and adding to initial notes which had been taken during interviews (Schloss & Smith, 1999). Where possible, data collection procedures were supported by a research assistant. This was particularly valuable in group interviews and children's focus groups. The assistant was responsible for taking detailed notes and ensuring the audio equipment functioned properly so that I could focus on interviewing participants.

Interview tapes were transcribed and each adult interviewee was given an opportunity to review their transcript[28]. The transcript reviewing process was intended to serve as a means of verification, so that participants could confirm the transcript was an accurate account of their interview. This process, however, became problematic. Teachers at one school, for example, were concerned with their spoken language, perhaps as verbatim accounts do not flow like written language and are often grammatically incorrect. Teachers at another school used the review process as an opportunity to edit their transcripts, making grammatical changes and removing sarcasm from their comments. Additionally, there were teachers who did not return their transcripts, causing delays to the research. Consequently, reviewing of transcripts was discontinued after data collection at the first three schools. As school staff were required to give written consent to participate in interviews, responses from those who did not return their transcripts were still included. Participants

[28] Children did not review their transcripts as parental consent was obtained prior to the focus groups for both the child's participation and the use of audio-taping equipment.

were, however, able to withdraw from the study at any time and given the necessary information to do so if they wished. None withdrew.

3.4.2. Questionnaire

The second phase of this research involved completion of a questionnaire by parents whose children attended each school. At school, children are involved in health promotions with their teachers, yet parents play a vital role in supporting (or not) learnt behaviours outside school hours. While staff have first-hand knowledge and experiences with school-based health promotions, parents are informed of activities and study topics through newsletters or other forms of communication from the school. The questionnaire, therefore, sought to discern parents‘ perceptions of health and health promotions, including whether or not school-based promotions are supported at home, and with what, if any, effect/s.

Clearly, expectations, experiences and perceptions of promotions were likely to vary across families, so the survey was an appropriate instrument to use for collecting information from a sample of parents and it was reasoned that emergent data could then be used to make generalisations about the characteristics, attitudes or behaviours of the larger parent population (Schloss & Smith, 1999). As schools may have hundreds of families in their community, a key benefit of choosing a survey approach is economy (Creswell, 1994). Surveying was, thus, considered to be the most suitable method for sampling as many parents as possible from each school‘s parent population. The intention was not to be able to generalise results to the entire New Zealand parent population but rather, to undertake a study which provided a narrative of behaviours within a small sample of Auckland schools.

The questionnaire distributed to parents included questions developed from issues identified in academic literature and assertions made in consumer media regarding nutrition, physical activity, obesity, and the role of parents in children‘s health education. Data were gathered to explore variables which focus on factual matters; attitudes, opinions and beliefs, and; past, present and intended behaviours (Hansen, 2008). Factual matters included demographics, types of health promotions operating within the schools, and whether or not parents had received information about the promotions. Attitudes, opinions and beliefs comprised parents‘ views on eating and physical activity related issues, and the impact of health promotions on children‘s health knowledge, attitudes and behaviours. Past, present, and intended behaviours were assessed through questions regarding parents‘ own and their children‘s eating and exercise habits.

In designing the questionnaire, consideration was given to determining the most effective procedure(s) for gathering each data item and devising questions that would achieve the desired

information (Hansen, 2008). A variety of dichotomous and multichotomous close-ended questions, scaled-response questions and open-ended questions were used. Structured questions, for example, included a set of response options, such as scales to measure agreement, where 1 = Strongly Disagree and 5 = Strongly Agree[29]. Where attitudinal data were requested, mixes of positively and negatively worded statements were used to minimise directionality bias. Open-ended questions were used to complement the structured questions. This design allowed parents to provide additional information they felt was important and meaning they would be more likely to accurately convey their attitudes and opinions (Schloss & Smith, 1999).

The questionnaire was pre-tested to ensure content was suitable for each school's parent population. As lengthy questionnaires were likely to reduce the response rate (Frazer & Lawley, 2000), pre-testing was also used to establish an average time for completion of no longer than 15 minutes. On the basis of pre-testing, modifications were made to the layout and overall readability of the questionnaire before distribution. After the questionnaire was distributed at the first school, no further modifications were made[30]. The questionnaire, together with a covering letter from the principal, an information sheet explaining the study and a reply-paid envelope, was sent home with children at the six schools[31].

3.5. Data Analysis Methods

3.5.1. Document Review

Documents relating to public health, the HPS initiative and the New Zealand school curriculum were reviewed to obtain contextual information for the research. The review process did not involve critical analysis of the documents *per se,* but rather I felt that it was important to have read such documents in order to gain understanding of health promotion policy and practice within New Zealand.

The ‗Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau' (HEHA) strategy documents provided insights into the way in which the Ministry of Health intends to address increasing rates of obesity in New Zealand. The stated purpose of the strategy is to address the areas of nutrition and physical activity in order to reduce the risk of non-communicable diseases such as

[29] A Likert scale is used to measure the degree of agreement or disagreement with statements about some concept or construct. The original, and typical Likert format involves a 5-point scale (as is used in this research), but sometimes 7, 9, or 11 levels are used (Frazer & Lawley, 2000; Hair, Bush, & Ortinau, 2003; Page & Meyer, 2000).

[30] The questionnaire had potential for improvement as interview stages of the research and successive distributions of the questionnaire informed the process. Maintaining consistency at each school, however, was of greater importance for the purpose of comparing survey results. The same questionnaire was, therefore, distributed to all six schools.

[31] Schools used the ‗Eldest and only' method of sending material home with children to ensure each family received only one questionnaire.

cardiovascular disease, diabetes, cancer and obesity. The HEHA strategy is documented in two publications: "Healthy Eating – Healthy Action. Oranga Kai – Oranga Pumau: A background" (2003a) and "Healthy Eating – Healthy Action. Oranga Pumau – Oranga Kai: A strategic framework" (2003b). Based on sources such as the National Nutrition Survey (1997), the former document justifies the need to improve nutrition, increase physical activity and reduce obesity in New Zealand, particularly for Māori and Pacific peoples. The latter document details the strategy itself, setting out an approach to addressing nutrition, physical activity and obesity in both individual behaviour and the environment.

A range of documents relating to HPS were reviewed for this research, including World Health Organization (WHO) documents (2003b) and the Ottawa Charter (World Health Organization, 1986), the principles of which underpin the HPS initiative. Materials relating to the implementation of HPS in New Zealand was collected from regional HPS coordinators in the form of books, pamphlets and other publications (Ministry of Health, 2001; Wyllie et al., 2000). Websites also provided useful information[32]. Collectively, the HPS material provided insights to how the initiative was developed, its purpose and objectives. Locally produced documents assisted with understanding how the initiative has been implemented in New Zealand.

The New Zealand Curriculum was also reviewed. The framework contains a set of national curriculum statements which define the learning principles, achievement aims and objectives all New Zealand schools are required to follow (Ministry of Education, 2004). Curriculum documents were used primarily to gain an understanding of health education and promotion in New Zealand primary schools. The curriculum of each school in this study was also examined. A school's own curriculum contains the ways in which they put into practice the policy set out in the national curriculum statements. Schools take into account local needs, priorities and resources, and design the curriculum document in consultation with their communities (Ministry of Education, 2004). Each school's curriculum was used in profiling the school cases, focusing on nutrition and physical activity policies, education and initiatives. Additionally, any other materials (e.g. brochures, pamphlets, information packs) relating to health promotions which could contribute to the case profiles was considered. These were documents either publicly available or distributed to schools by the service providers (such as the Heart Foundation, Sport and Recreation New Zealand (SPARC), etc.).

[32] Note, academic literature on the HPS initiative is discussed in Chapter Two, section 2.2.2, p. 14 (see, for example, Lister-Sharp, Chapman, Stewart-Brown, & Sowden, 1999; Lynagh, Perkins, & Schofield, 2002; Mukoma & Flisher, 2004; St Leger, 2001; St. Leger & Nutbeam, 2000).

3.5.2. Qualitative Analysis

Interview and focus group transcripts were coded and analysed following best practice procedures detailed by Miles and Huberman (1994). Each transcript was allocated an attributional code to identify the decile rating and HPS status of the school and the participant(s) interviewed. Codes were also used to label the content of transcripts. They were allocated to words, phrases, sentences, or paragraphs within the transcripts which conveyed a particular idea. Transcripts were coded by hand before progressing to the use of qualitative data analysis software. The manual coding process was used to examine transcripts and explore suitable codes for the data, but also provided a chain of evidence in the coding procedures. Miles and Huberman's (1994) checking-coding procedures were also followed. Transcripts were coded primarily by me, but in the initial stages of coding excerpts were also independently coded by one of my supervisors. Discrepancies were discussed until agreement was reached to ensure definitional clarity and inter-coder consistency. Codes serve as categorical/thematic labels and were used to identify themes within the data. Coding, and the identification of themes, followed an iterative process. Initial codes were modified as field work continued and new cases were examined (Miles & Huberman, 1994). All codes, sub-codes, definitions and examples of these codes are detailed in Appendix A (p.229).

Qualitative data analysis was completed using the QSR N6 (NUD*IST) software package[33]. QSR N6 was designed to aid data management and offers a range of tools with which to do so. In this study, the software was used to store, explore and manage the interview and focus group transcripts. Interpreting and coding data involved creating _nodes'. The codes and sub-codes shown in Appendix A (p.229) were used as nodes in N6. These codes were based on the study's conceptual framework so the content of transcripts was allocated to nodes which represent elements of communication processes within school-based health promotions. Data were coded by placing at the node for a topic, a reference to the data about that topic. As the project progressed, material on a topic was reviewed and recoded, and nodes were modified, merged or rearranged. Search functions were used to identify occurrences of key words (as well as appropriate synonyms) and to determine how topics related to each other. These ongoing processes allowed me to refine concepts, generate new ideas and link them with ideas from literature, while identifying patterns and themes (explicit and implicit) which were enmeshed within the data.

Qualitative data analysis was conducted in three broad phases. The first stage of analysis was a descriptive procedure, creating a narrative of the data coded to each step in the communication processes within school-based health promotions. The narrative was then examined in depth, and summarised to highlight key findings from which underlying themes emerged. This second process

[33] QSR is a qualitative research software development company. The _NUD*IST' product line refers to _Non-numerical Unstructured Data with Indexing, Searching and Theorizing'.

was both a data exploration and reduction exercise. In the final stage of analysis, emergent themes were examined within each school case and across cases. Case evidence was used to illustrate key characteristics and boundaries of each theme. Cross-case analysis demonstrated the similarities and differences between schools with respect to the impact of each theme. An important point is that the write-up of findings, like the writing of this thesis as a whole, is both iterative and concurrent with the conduct of the study. Writing throughout the research process is necessary, because writing itself is a way of analysis and necessary for justifying analysis (Richards, 2005).

3.5.3. Quantitative Analysis

Returned questionnaires from parents (ΣN=229) were coded and the responses were entered into data analysis software packages. Research assistants were also involved in this process and each file was checked to ensure accuracy was maintained. Quantitative data were analysed using SPSS (SPSS Statistics) and the open-ended questionnaire responses were managed in Microsoft Excel[34]. Additionally, Stata[35], also a statistical software package, was used for regression analyses.

Initial analysis methods included descriptive summaries and frequencies of the data to identify key variables for further analysis. The statistical significance of the variables was determined using p-values. Single equation regression models were the main technique used to analyse data because in the single equation specification, the behaviour of a single dependent variable can be explained when considered together with a number of independent variables. Consistent with the data collected, probit and ordered probit models were used. (Note, the regression analyses are explained in detail in Chapter Six). Results were written-up concurrently with data analysis, and responses to complementary open-ended questions were analysed in conjunction with the quantitative data. This process enabled the identification of links between the qualitative and quantitative data, where the findings of one could be used to support and explain the results of the other and *vice versa*.

3.6. Validity and Reliability

There are four tests commonly used to judge the quality of empirical social research: construct validity, internal validity, external validity and reliability (Yin, 2003). First, construct validity is concerned with developing a sufficiently operational set of measures for the concepts

[34] As Microsoft Office software programmes are widely used, Excel was selected for some aspects of data management so that research assistants (who did not have personal access to more advanced software such as SPSS) were able to complete data entry. Data stored in Excel can also be imported into SPSS and *vice versa*, meaning research assistants could complete their assigned tasks using Excel while I used SPSS for more complex statistical analysis.

[35] The Stata software was recommended to me by university colleagues for conducting regression analyses. As the software is widely used among the economists and statisticians within my Department, I considered that it would be suitable for this research. Additionally, the Stata software was easily accessible (through the University) and with numerous other users in the Department, technical support was available when required.

being studied. Internal validity, for explanatory or causal studies only, is concerned with establishing a causal relationship to determine whether or not certain conditions lead to other conditions, as distinct from specious relationships. External validity, however, deals with establishing whether or not a study's findings can be generalised beyond the case study within which it is bounded. Finally, reliability involves demonstrating whether or not the procedures of a study can be repeated to produce the same results.

Yin (2003) recommends a range of tactics for addressing the four design tests. Table 3.4 below is a reproduction of Yin's (2003, Figure 2.3, p.34) case study tactics for the four tests. The third column is an addition to the table which illustrates the tactics used in this study to address the four tests.

Table 3.4. Case Study Tactics and Four Design Tests

Tests	**Case Study Tactic**	**Tactics used in this Study**	**Phase of research in which tactic occurs**
Construct validity	*Use multiple sources of evidence	*Documentation, archival records, interviews and observations	Data collection
	*Establish chain of evidence	*Case study notes as a result of interviews, observations and document analysis *Case study documents *Tabular materials *Narratives	Data collection
	*Have key informants review draft case report	*Review of transcripts by participants *Continued contact with key informants *Key informants supplied with copies of research outputs	Composition
Internal validity	Internal validity is relevant for explanatory or causal statistical studies. However, this study is qualitative and exploratory. Hence triangulation and rigour (rather than internal statistical validity) represent a better yardstick of the assessment of relevance.		
External validity	*Use replication logic in multiple case studies	*Development of a theoretical framework	Research design
Reliability	* Use case study protocol *Develop case study database	* Use of a case study protocol and the development of a case study database	Data collection
Source: COSMOS Corporation, cited in Yin (2003)			

In this study, construct validity was established through use of multiple sources of evidence and by maintaining a chain of that evidence. Documentation, for instance, included the national school curriculum, materials relating to school-based health promotions (e.g. brochures or pamphlets from service providers) and school newsletters. HEHA strategy documents and information relating to HPS were also included as documentation. Archival records included lists of schools (i.e. as produced by the Ministry of Education), each school's curriculum records and ERO reports. Interviews and observations were primary sources of evidence, namely interviews with school staff, focus groups with children, surveys of parents and on-site observations during fieldwork.

A chain of evidence was maintained through case study notes including those taken during interviews, observations and document analysis. Notes included audio tapes, hand written notes (e.g. those written during interviews) and typed notes (e.g. those prepared by me after an interview or prepared as consequence of document analysis procedures). Case study documents included the documentation discussed in the previous paragraph, as well as information sheets, consent forms, interview schedules and the parent questionnaire, plus emails confirming times and dates of site visits and records of follow-up activities such as _thank you' letters. Tabular materials comprised the quantitative survey data that were collected from parents, entered into a statistical software package, and which were subsequently stored as computer files. Finally, case study narratives were used to integrate evidence as a form of preliminary analysis. School narratives, for example, were prepared to provide an overview of health promotions at each school. These narratives have not been included within this thesis but elements of them were integrated into the discussion presented in Chapter Four.

The final tactic Yin (2003) recommends for ensuring construct validity is to have key informants review a draft of the case report. For this particular study, there was no _draft report' *per se* as the doctoral dissertation was completed some three years after data collection began at the schools. As participants would be unlikely to read this dissertation in draft form (or even in its published form), I instead endeavoured to verify the data collected at each stage throughout the research process. Additionally, principals were sent copies of research outputs relating to the study (e.g. conference submissions and working papers). This provided them with opportunities to comment on the work to date.

In robust research, external validity is typically addressed through the development of a theoretical framework because the very presence of a framework provides a construction against which concepts, theories and emergent ideas can be appraised. In this study, the conceptual framework (as first discussed in Chapter Two, section 2.5, p.40) has outlined communication processes within school-based health promotions and children's subsequent health behaviour. The framework has been used to identify conditions under which health promotion occurs (literal

replication which predicts similar results), as well as conditions under which promotion does not occur, or occurs in a less effective way (theoretical replication which predicts contrasting results but for predictable reasons). The replication logic is similar to the way in which scientific experiments are conducted: of 6-10 cases studies, as with 6-10 experiments, we might expect a few to be literal replications, whereas a few others might be designed to investigate theoretical replications (Yin, 2003)[36]. If the cases turn out as predicted, there is, by probabilistic implication, evidence to support the study's initial set of propositions; if not, then initial propositions must be reconsidered and retested with other cases. The theoretical framework is important, therefore, as it becomes the vehicle for generalising new cases, and if cases do not work as predicted, the framework must be revised (Yin, 2003). In this study, the initial conceptual framework was modified throughout the research process to account for contradictory results, thus strengthening the overall validity of the framework and the study.

Finally, reliability was addressed in this study by the use of a case study protocol and the development of a case study database. The protocol is a written guide which became used as a yardstick for carrying out data collection procedures in the study (Yin, 2003). The case study protocol included providing participants with an overview of the project (e.g. objectives and background information) and developing field procedures, such as gaining access to schools, acquiring resources (e.g. audio-taping equipment), and scheduling a timeline for data collection. Case study questions (i.e. the set of questions to be answered by the study) and a guide for the case study report were also included. The case study database was simply the collection of notes, documents, tabular materials and narratives discussed earlier with respect to maintaining a chain of evidence for determining construct validity. It is argued, therefore, that the case study protocol and case study database increased both the construct validity and the reliability of the study by allowing an external observer to follow the derivation of any evidence from initial questions to final conclusions. Furthermore, it was reasoned that the observer would be able to trace procedural steps in either direction in order to be able to verify that the case study report contained the same evidence as collected and that no evidence had been lost due to data management errors or bias (Yin, 2003).

3.7. Summary and Concluding Comments

This chapter explained the procedures used in this research. A case study design, involving six primary schools in Auckland, was used to examine communication processes within school-based health promotions. Primary data collection involved interviews with school staff, a survey of parents and focus groups with children. Validity and reliability criteria were met with the use of

[36] This flexible approach is consistent with qualitative methodology which tends to eschew standardised study procedures.

multiple data sources and a chain of evidence, continued contact with key informants, development of a theoretical framework, and use of a case study protocol and case study database.

I acknowledge that the research design and procedures used in this study are derived from tried and proven methods. Although case study methodologies are a common form of inquiry, my theoretical and contextual platforms are unique. That is, the development of a blended models framework combining marketing and behavioural theory, applied specifically in the social marketing context of school-based health promotions, provides this study with significant research originality.

An important contribution of this thesis to the research procedures knowledge base concerns documentation of difficulties encountered during the interview transcript review process. As a relatively new researcher, I endeavoured to follow what appeared to be best practice procedures, such as inviting participants to review transcripts. Discovering that this process was fraught with difficulties was challenging for the conduct of the research, but enlightening as a learning experience. The point here is that researchers should be mindful of implementing procedures simply because other researchers have used them. Moreover, these experiences highlight the need for flexibility within the conduct of research, so that procedures can be modified, added or removed as required. Ultimately, this research demonstrates what may be described as situational responsiveness, that is, the procedures were adapted according to the changing nature of the six contexts from which data were gathered.

Another distinct dimension of this research is that it involved children, a comparative rarity within the stringent regimes of contemporary university ethics committees. Typically, gaining permission to conduct research with children is difficult for a variety of reasons, such as those highlighted by Morrow (2004) which relate to the vulnerability and competence of children. Children are vulnerable because, for instance, they are physically weak compared to adults and lack the knowledge and experience of adults. It is also assumed that children lack the competence to first, make decisions regarding whether or not to participate in research and second, provide valid data (Morrow, 2004). While it is beyond the scope of this study to provide elaborate commentary on these ethical issues, the point is that such issues do exist, and hence, it is important as a researcher to consider them.

For this research I, thus, completed a full ethics application (not partial) for the Massey University Albany Human Ethics Committee (MUAHEC) which involved indicating any potential ethical issues and detailing how these would be addressed. At Massey University an application *must* be completed before any research involving human participants can proceed. In other words, this is a mandatory process and because of the formality of that process, I was forced to ‗think through' all aspects of the research procedures.

PART TWO
SENSE-MAKING OF CASE DATA AND THEORY

Part Two of this thesis comprises Chapters Four and Five, and focuses on describing the data collected and applying the *a priori* theoretical framework. In this part of the thesis, data is largely *presented* rather than *interpreted*, but this serves two important purposes as a preface to Part Three. First, by outlining the case data, Part Two provides the context for the discussion of findings and results in Part Three. Second, this part of the thesis demonstrates how data were analysed so that in Part Three links are evident between the data, analyses, and the interpretation of findings and results.

Chapter Four provides a Summary of School Cases. This chapter describes the six cases; it compares the demographic profiles of each school, describes the research participants, details the forms of data which were collected, and describes health promotions operating at each school.

Chapter Five demonstrates how data were analysed using the conceptual framework. Key findings, drawn from school staff interviews and the children's focus groups, lead to the identification of communication themes in the data. Application of the *a priori* framework also showed that it was in fact not a suitable fit for the data. Accordingly, an *a posteriori* framework was developed and presented.

CHAPTER FOUR
SUMMARY OF SCHOOL CASES

4.1. Chapter Overview

The purpose of this chapter is to provide an overview of the school cases. As discussed in Chapter Three, this study employed a multiple case research design involving six primary schools to explore communication processes within school-based health promotions. Each school and its community comprise one case. In this chapter, demographic characteristics of the schools and their communities are discussed. Schools were primarily selected based on decile ratings and whether or not they operate as a Health Promoting School (HPS). Hence, there are three decile groups of schools (high, mid, low) and each group includes one HPS and one non-HPS. Characteristics such as number of staff and students, location and physical surroundings were also considered as possible factors which might explain the differences in communication and health promotion at each school. A summary of the research participants is also presented, followed by a discussion of the health promotion activities and food policies at each school.

4.2. Demographic Characteristics

High, mid and low socio-economic communities are represented. Members of School A and School B's communities are considered to be of high socio-economic status, while members of School E and School F's communities are considered to be of low socio-economic status (as indicated by the decile rating). Schools C and D are mid-decile schools, so members of their communities are considered to be of mid-range socio-economic status. One school in each decile group (high, mid, low) is a HPS (i.e. Schools B, D and E). The HPS initiative was developed by the World Health Organization (WHO). A HPS is one that constantly strengthens its capacity as a healthy setting for living, learning and working (World Health Organization, 2003b).

Of the six schools in the study, five are located in urban areas. School B is the only one located in a rural community. Schools were sampled from the Greater Auckland region, and are located in Auckland City, North Shore City, Waitakere City, and Franklin District[37]. Four of the schools, A, B, D and F, are contributing primary schools, offering Year 0 to the end of Year 6 (children aged 5-11). The other two schools, C and E, are full primary schools, which, in addition to offering Year 0 to the end of Year 6, also offer Year 7 and 8 (children aged 12-13).

Schools B, D and F are similar in size with regard to student numbers, while Schools A and C are larger. School C is the largest school in the study with a roll of approximately 600 students,

[37] A map of the Auckland Region can be found at http://www.newzealand.com/travel/library/o86143_23.pdf.

and School F, with a roll of approximately 185 students, is the smallest. Schools A and C, which have the greatest numbers of students, also have a greater number of teachers, approximately three times more than Schools B, D, E and F. At high decile schools, A and B, students are predominantly of NZ European ethnicity, while at low decile schools, E and F, students are predominately of Māori and Pacific Island ethnicities. At School C, two thirds of students are of NZ European ethnicity, and just under one third is Māori and Pacific Island students. At School D, half the students are of Māori and Pacific Island ethnicities and one third are of NZ European ethnicity (the remainder are of other ethnicities). The school characteristics are summarised in Table 4.1

Table 4.1. Summary of Demographic School Characteristics

	School A	**School B**	**School C**	**School D**	**School E**	**School F**
Decile	10	9	5	4	1	1
Health Promoting School (HPS)	No	Yes, since 1999	No	Yes, start date unknown	Yes, since 2001	No
Area Type	Urban	Rural	Urban	Urban	Urban	Urban
Location	North Shore City	Franklin District	Waitakere City	North Shore City	Waitakere City	Auckland City
No. of Students (approx.)	415	250	600	220	265	185
No. of Teachers (approx.)	30	10	30	10	15	10
Ethnic Composition*	NZ European 67% Māori 5% South African 9% Chinese 2% Samoan 1% Tongan 1% Other 15% (ERO, 2006)	NZ European 80% Māori 12% Indian 8% (ERO, 2003)	NZ European 67% Māori 23% Samoan 2% Cook Island Māori 2% Tongan 1% Dutch 1% Other 4% (ERO, 2004)	NZ European 30% Māori 25% Tongan 12% Samoan 8% Filipino 6% Other 19% (ERO, 2005)	Māori 32% Samoan 25%, Tuvaluan 21% Tongan 7% NZ European 5% Niuean 4% Cook Island 3% Other 3% (ERO, 2005)	Māori 42% NZ European 8% Tongan 20% Samoan 8% Middle Eastern 8% Cook Island 4% Niuean 3% Other 7% (ERO, 2006)
School Type	Contributing: Years 1-6 (ages 5-11)	Contributing: Years 1-6 (ages 5-11)	Full Primary: Years 1-8 (ages 5-13)	Contributing: Years 1-6 (ages 5-11)	Full Primary: Years 1-8 (ages 5-13)	Contributing: Years 1-6 (ages 5-11)

Source: The data in this table is largely sourced from Education Review Reports conducted by the Education Review Office (ERO). The ERO reviews schools' services every three years, so the reports used in this study are those which were most recently available at the time the data was collected. The reports are not listed in the References in order to protect the identity of each school.

*Decile is an indicator of the socio-economic status of the school catchment population. Decile ratings range from ten to one, where a rating of ten represents a school community with the highest socio-economic status and a rating of one represents a school community with the lowest socio-economic status.

+Compulsory education in New Zealand is divided into primary, intermediate and secondary schooling. Primary schools are the first level which cater for children from the age of five years. A contributing primary school offers Year 0 to the end of Year 6 (approximately ages 5-10). Children in Years 7 and 8 (approximately ages 11-12) may either be in a full primary, or a separate intermediate school, secondary or composite/area school.

4.3. Research Participants and Data Collection Methods

Data was collected at each school using a mix of qualitative and quantitative methods. All principals were interviewed individually and teachers were interviewed in groups. Approximately four teachers were in each group, although at School B a larger group of eight were interviewed and at School F only two teachers were interviewed. At Schools A, B and E similar numbers of children were involved in the study, with three focus groups conducted at each school. Two focus groups were conducted at School C and only one focus group was conducted at Schools D and F. School A had the greatest number of responses to the self-completion questionnaire sent to parents, while Schools D and E had the least number of responses. Response rates and other details relating to the survey are discussed in Chapter Six. Table 4.2 presents a summary of the data collected and participants involved at each school.

Table 4.2. Summary of Research Participants and Data Collection Methods

Participants:	**Principals**	**Teachers**	**Children**	**Parents**
Data Collection Method:	**Individual Interview**	**Group Interview**	**Focus Groups**	**Self-completion Questionnaire**
School A	1	4	3 groups; 25 children	76
School B	1	8	3 groups; 18 children	53
School C	1	4	2 groups; 13 children	46
School D	1	5	1 group; 8 children	13
School E	1	3	3 groups; 22 children	13
School F	1	2	1 group; 6 children	28
TOTAL **Six schools,** **351 participants**	6 interviews; 6 principals	6 interviews; 26 teachers	13 focus groups; 92 children	229 parents

4.4. Nutrition and Physical Activity Health Promotions

At the beginning of each interview, principals and teachers were asked to explain how health is promoted within their school. The following narrative regarding health promotions at each school is based on participants' responses to that question. Findings from the children's focus group discussions also contributed to the account. The information presented reflects what staff within each school chose to discuss with respect to health promotions. For instance, several schools take part, or have taken part, in the National Heart Foundation's *Jump Rope for Heart* programme. Each school's experience and perception of the programme, however, differs. The discussion below, therefore, reflects the issues considered pertinent to each school. A summary of the nutrition and physical activity promotions is presented in Table 4.3 (p. 77).

Each school's nutrition and physical activity programmes are supported by other resources, such as the Life Education Trust mobile classrooms. Schools A, B, C and F mentioned Life Education as a component of health education. Other resources including *Munch and Crunch*, *5+A Day* (fruit and vegetables) and *Iron Brion* promote healthy eating practices to children. Schools D, E and F have had *Iron Brion* come to their school. Schools D and E also hold healthy morning teas and lunches to promote healthy eating and provide parents with ideas for healthy options for children. School F has recently become part of the government-sponsored *Fruit in Schools* (FIS) initiative designed to encourage children to eat more fruit and adopt healthier lifestyles. Only decile one schools are eligible to apply for the programme. The school receives a free piece of whole fruit (e.g. a banana) for each child daily (which will continue for up to three years). The FIS initiative is supported with healthy eating lessons in the classroom. Staff members at School F indicate student health and wellbeing is a high priority.

Physical activity programmes at each school are designed to meet the requirements of the national curriculum framework and according to staff often well exceed the Ministry of Education's recommended guidelines (as discussed further in Chapter Seven, section 7.2.1, p.129). Programmes at each school include fitness sessions and sporting activities such as a cross-country run and athletics. Fitness sessions are usually in the morning, for approximately 15-30 minutes. At School B, for instance, senior students have half hour sessions, with 15 minutes for junior students. Fitness sessions at the schools can include *Jump Jam Kidz Aerobix*, dance (e.g. *Kapa haka*, Māori performing arts), running, skipping, fitness circuits and other skill training activities. According to staff, *Jump Jam Kidz Aerobix* has been particularly successful for School A in promoting physical activity. At School C, there are also organised games at lunch time (e.g. dodgeball) and sports equipment (e.g. balls) which children can borrow for games or to play with friends. At Schools E and F, fitness is strongly profiled to provide children opportunities to be physically active and take

part in sports and exercise. Both principals consider opportunities for physical activity particularly important for the purpose of expending energy before children engage in classroom learning.

In addition to fitness sessions, there are a variety of other health promotion activities which also contribute to each school's implementation of the Health and Physical Education (PE) Curriculum. The *Perceptual Motor Programme* (PMP) used in Schools A, B and C, helps children develop co-ordination and motor skills. PE sessions include external stakeholders (e.g. professional sports people representing their club/sport) coming into schools to teach specific sports and skills. At Schools A and B these include orienteering, badminton, touch rugby, cricket and gymnastics. Schools also have their own sports teams (e.g. netball, soccer, rugby) and sports days, with both intra-school and inter-school competitions. Schools are involved in activities such as *Jump Rope for Heart*, fun runs and *Push Play Day*. Staff at School D noted they participate in *Jump Rope for Heart* every second year as *Jump Rope* requires students to obtain sponsors. The school also requires sponsors for events such as spellathon and mathathon (sponsored spelling and math related activities), so holding *Jump Rope* every second year reduces pressure on parents and families to spend money on sponsoring children.

There are also other factors contributing to each school's specific areas of focus in health promotion. For Schools A, C and F these primarily revolve around the physical characteristics of the school and the school environment. School A, for example, has a swimming pool and is close to local beaches, so there is a strong emphasis on swimming skills and water safety as part of their Health and PE curriculum. The *Waterwise* programme is an integral component used by the school to teach children aquatic awareness through learning basic sailing skills. The *Walking School Bus* is also important at School A. This was initiated by a group of parents who were interested in establishing walking buses for their children and others attending the school. Walking buses are operated by parents and promoted throughout the school. Children enjoy „catching' the walking bus and receive certificates and other incentives for their participation[38].

School C is located on a busy main road, so road safety is an important consideration for activities taking place in and around the school. For this reason, the school does not have any *Walking School Buses*. Additionally, although located in a busy urban area, School C was previously considered a semi-rural school. The school catchment area includes coastal communities and a large portion of the Waitakere (mountain) Ranges. The majority of children come from rural areas. At

[38] It is noted that the promotion of *Walking School Buses* at a particular school can be majorly influenced by the local council's school travel planning resources and priorities. Rodney District Council, for example, has strongly supported this programme using government funding assistance. *Walking School Buses* are supported by government as a means to reduce car dependency for student travel to and from schools. Likewise, there are programmes to promote cycleways for safe cycling to school. The transport mode shift from car travel to walking and cycling has the two-fold benefit of reducing traffic congestion while contributing to health (N. V. Hawkins, personal communication, January 19, 2009).

School C, teachers have recently been involved in learning new strategies for PE and activity through a professional development programme. Teachers indicated the programme has taught them how to better engage children in PE by making activities interesting and fun. At School F, the principal indicated their PE programme is comprehensive, including fitness sessions, sports and PE sessions. The school does not have a swimming pool so children have lessons at a local leisure centre. Some children participate in athletics and sports teams, but as the school is small, many join teams through local sports clubs.

Schools B, D and E are HPS and as such their approaches to health appear more holistic and child-centred than the other three schools (i.e. Schools A, C and F which are *not* HPS). At School B, the principal explains health is considered in a global sense, taking into account a child's personal well being, nutrition, physical activity, emotional and spiritual well being. The values of health and healthy practices are promoted throughout all school projects and activities. At School D, like School B, health is promoted in a variety of ways in recognition of the multiple components of health (e.g. nutrition, physical health, mental health). The principal from School D explains they have a _wrap-around' (i.e. holistic) approach to health, underpinned by a belief they can achieve a healthier school in all senses. Modelling is important; staff try to model healthy practices and acknowledge children's positive behaviours. In School D, there is a children's health promoting team which is an integral part of communicating health, with senior children promoting messages and acting as role models for junior children. At School E, health is promoted via the HPS team which have brought about a number of changes in health for their school (e.g. introducing healthy food items onto the tuckshop menu and removing unhealthy ones). While the health component of the curriculum includes classroom learning in health (such as healthy eating and the food pyramid), the principal suggests much of the health promotion taking place is incidental. That is, on a daily basis, the teachers affirm children's healthy behaviours and discourage unhealthy behaviours by commenting on lunches and foods brought from home or outside the school.

Table 4.3. Summary of Nutrition and Physical Activity Promotions

Nutrition and Physical Activity Health Promotions	Schools					
	A	B	C	D	E	F
Cross Country A running event.	✓	✓	✓	✓		✓
Fitness Daily physical activity such as aerobics, skipping circuit training etc.	✓	✓	✓	✓	✓	✓
Fruit in Schools (FIS) A government-sponsored initiative designed to encourage children to eat more fruit and adopt healthier lifestyles (Ministry of Health, 2007). Participating schools receive a free piece of fruit for each child each day (for up to three years).						✓
Iron Brion The 'Iron Brion Barbecue Roadshow' encourages children to think about a healthy lifestyle, including a balanced diet and exercise (Beef + Lamb New Zealand, n.d.).				✓	✓	✓
Life Education Life Education is a charitable trust that delivers a health programme to children in preschool, primary and intermediate schools. There are 19 learning modules that fit in with the school curriculum (Life Education Trust, 2008).	✓	✓	✓			✓
Jump Rope for Heart The programme promotes the importance of physical activity and healthy lifestyles through curriculum-based skipping and movement skills (National Heart Foundation, 2006).	✓	✓	✓	✓		
Jump Jam Kidz Aerobix An aerobics programme for primary and intermediate schools designed by Brett Fairweather, a New Zealand and world aerobics champion (Kidz Aerobix Limited, 2006).	✓	✓	✓	✓		✓
Munch and Crunch Promoting the consumption of fruit and vegetables.					✓	
Push Play Day *Push Play* Day is the annual day SPARC and its partners across the country celebrate physical activity and encourage people to lead active healthy lives (SPARC, 2008a).	✓		✓			
Perceptual Motor Programme (PMP) PMP is a motor coordination programme which aims to develop children's motor skills that are foundation skills for many activities in the classroom (Moving Smart Ltd., 2009).	✓	✓	✓			
Healthy Morning Teas and Lunches Morning teas and lunches in which children bring along healthy foods (e.g. fruit and vegetable platters) to share with the class.				✓	✓	
Health Promoting School(s) (HPS) Health is viewed as a holistic concept where members of the school community work together to identify and address health issues. Schools choose specific interventions to address issues of importance to their community (World Health Organization, 2003b).		✓		✓	✓	
Sports Days Intra- and inter- school competitions.	✓	✓	✓	✓	✓	✓
Sports Teams e.g. hockey, netball, rugby, soccer.	✓	✓	✓	✓	✓	✓
Walking School Bus A 'bus' that walks along a set route with at least one adult 'driver', picking children up at designated stops and walking them to and from school (RoadSafe Auckland, 2001).	✓				✓	
Waterwise An initiative designed to teach children water safety and aquatic awareness (NZ Schools Waterwise, 2008).	✓					
Shading is used to highlight that Schools B, D and E are Health Promoting Schools (HPS). The ticks (✓) indicate promotions which take place (or have taken place) at each school. Principals and teachers were asked broad questions about health promotion so they could discuss any topics they saw fit. Absence of a tick (✓), therefore, does not necessarily indicate absence of a particular promotion, rather it indicates that promotion was not specifically mentioned by school staff during the interviews.						

4.5. Food and Nutrition Policies

Of the six schools in this study, only School E reported having a formal policy which prohibits certain foods. Children at School E are not permitted to bring ‗unhealthy' food items to school such as fizzy drinks, biscuits, chocolate or other foods of low nutritional value. Although School E was the only school to indicate they have formal food policies, there are informal processes which take place in the other schools. For instance, teachers may confiscate unhealthy food and beverage items from children (such as two litre bottles of fizzy drink) which are then returned at the end of the school day. Encouraging healthy practices is the main focus. At School A, for example, children are encouraged to drink water and teachers have water bottles in their classrooms for children to use.

Teachers at all the schools monitor what children bring in their lunch boxes and buy from the lunchroom. School B was trialling a new monitoring system, whereby the same teachers were consistently on duty during lunch breaks. Having the same teachers involved over a period of time enabled them to profile what children ate, identify children who needed help or encouragement with eating, and identify any cases which might be cause for concern. Similarly, at School C, teachers sat with the children during morning tea and lunch so they were aware of what children ate. At School D, teachers stressed they encourage children to eat the healthier choices in their lunches before they eat treats.

Schools B and C had recently made changes to their tuckshop menu offerings at the time of interviewing. At School B, Heart Foundation endorsed food items (approved through the *Pick the Tick* programme[39]) were trialled with children, and then introduced onto the menu. Parents were sent information regarding the changes, which included a return slip should they wish to comment. The principal indicated responses from parents were generally positive, but it was the children who endorsed the changes and communicated these changes to their families. At School C, a new food supplier was employed to run the tuckshop. The primary concern was to ensure a healthy menu, so like School B, they opted for a supplier whose products are Heart Foundation approved (through the *Pick the Tick* programme). Marketability of the menu and profit-making were also important considerations for School C[40]. At Schools D, E and F the tuckshops also offer healthy food choices. Staff at School F admitted their menu offerings are not Heart Foundation approved, but they are monitored closely and sweets, sugary drinks and chips are excluded. At School A, teachers acknowledged some foods sold in their tuckshop are not healthy (e.g. potato chips), but considered a

[39] The *Pick the Tick* programme is a self-funded, public health programme, which involves labelling healthy food options with a tick symbol. In general, foods carrying the Heart Foundation's Tick symbol are lower in total fat, saturated fat, added sugar and sodium than comparable foods. The Tick symbol is designed to help people make healthier food choices quickly and easily (Heart Foundation, 2008).

[40] The affordability of healthy food items for students (and/or their parents) may also have been an influencing factor regarding tuckshop food options.

bought (i.e. purchased) lunch to be a treat that is different from lunches prepared in the child's home. Interestingly, a healthier menu was introduced into School A's tuckshop shortly after this project was conducted at their school. A summary of each school's food and nutrition policies is presented in Table 4.4 below.

Table 4.4. Summary of School Food and Nutrition Policies

	School A (non-HPS)	**School B (HPS)**	**School C (Non-HPS)**	**School D (HPS)**	**School E (HPS)**	**School F (Non-HPS)**
Formal food policies	×	×	×	×	✓	×
Monitoring children's lunches	✓	✓	✓	✓	✓	✓
Tuckshop offerings	Some unhealthy options+	Healthy options: Heart Foundation approved*	Healthy options: Heart Foundation approved*	Healthy options	Healthy options	Healthy options
+At the time of interviewing *Through the Pick the Tick Programme						

4.6. Summary

This chapter presented a descriptive summary of the school cases and the data collected at each one. The discussion outlined demographic characteristics of each school, their health promotions and food policies. Commonalities, differences and unique characteristics were identified, which provides important insights for understanding findings and results discussed in Part Three of this thesis.

CHAPTER FIVE
APPLICATION AND REVISION OF CONCEPTUAL FRAMEWORK

5.1. Preamble

This chapter provides a brief account of how the *a priori* conceptual framework of the study was applied and then subsequently revised in order to evolve a more valid model which demonstrated ‗goodness of fit'. The resultant *a posteriori* framework that emerged was found to better serve as a conceptual heuristic for making sense of data. In other words, the *a priori* framework, as presented in Chapter Two (section 2.5, Figure 2.9, p. 40) was initially used to explore how communication processes might impact upon implementation and outcomes of school-based health promotions. However, it was found to be imperfect which was why the *a posteriori* scaffold was deliberately devised at this stage (i.e. it is not intended, therefore, to link case data and insights, but it is intended to clarify the application of theory in this context).

Initially, in order to demonstrate the application of the framework, I organised findings from school staff interviews and children's focus groups in accordance with the components of the *a priori* model. That is, they were grouped as: source, receiver and communication objective; message channel, messages and communication tools; communication noise; communication outcomes; and feedback which are consistent with the theoretical base (i.e. the Integrated Marketing Communications (IMC) process) from which the constructs were drawn.As a consequence of using that conceptual framework, I discovered, following analysis of each component, that the model, as originally proposed, did *not* fit the data. Thus, I revised the model. This revised *a posteriori* conceptual framework makes an important contribution to the thesis by illustrating communication processes as they occurred in the school cases, and ultimately offers a fresh framework that has the potential to be applied in other promotional contexts. The *a posteriori* framework is presented in the final section of this chapter (p. 96).This chapter also illustrates the link between data analysis, and the results and findings of the research which are presented in Chapters Six, Seven and Eight. Key insights regarding each component of communication, as summarised in Table 5.1[41], were learnt from applying the *a priori* model and are the focus of the discussion in this chapter. These key insights, as indicated throughout the discussion, led to the identification of four underlying communication themes. Theme A relates to the juxtaposition of government policy and community priorities, while Theme B pertains to stakeholder roles and relationships within school-based health promotions. Health promotion approaches comprise Theme C. These three themes are discussed in

[41] The emphasis here is on the summary of information; the specific and actual links are presented throughout the thesis.

Chapter Seven. Theme D focuses on the environmental contexts of health promotions and is discussed in Chapter Eight.

Table 5.1. Key Insights and Subsequent Emergent Themes Regarding Communication Processes within School-based Health Promotions

KEY INSIGHTS PERTAINING TO THE COMPONENTS OF COMMUNICATION PROCESSES WITHIN SCHOOL-BASED HEALTH PROMOTIONS:				
Source, Receiver and Communication Objective	Message Channel, Messages and Communication Tools	Communication Noise	Communication Outcome	Feedback
*Multiple sources and receivers with central path between schools (source) and children (receivers). *Health promotion objectives set out in NZ Curriculum Framework. Flexible statements allow schools to tailor promotions. *Curriculum operates as message channel for delivery of health and physical education (PE). *Government making legislative changes to nutrition and physical activity policies. *School and home are the two main environments in which children receive health messages.	*Curriculum is the foundation for developing health messages and the channel through which messages are delivered. *Schools promote wide variety of positive nutrition and physical activity messages. *Personal selling used by schools to communicate with children. Schools communicate with parents using Marketing Public Relations (MPR) and advertising. *Schools implement health promotions ranging from short-term programmes to on-going promotions incorporated into daily school activities. Food policies important to support health eating messages.	*Communication noise, children and parents' skills and abilities, and environmental conditions can enhance or inhibit communication in the school, home, media, retail and physical environments.	*Children learn health knowledge from multiple sources, and generally have basic nutrition and physical activity knowledge and positive attitudes towards healthy eating and exercise. *Children highlighted roles of parents and families in developing healthy nutrition and physical activity practices. *Formal evaluation measures are used for assessment of PE, but effectiveness of nutrition-focused health promotion is generally not measured formally.	*Feedback from children during school-based health promotions is immediate, allowing teachers to modify communications as required. *Classroom teachers work with the same students each day and develop relationships with them, which is excellent for fostering feedback.
UNDERLYING COMMUNICATION THEMES (stemming from the key insights identified above):				
Health promotions are based on government policy through requirements of the curriculum, but are also tailored to health issues schools perceive as priorities for their community. **THEME A:** **THE JUXTAPOSITION OF GOVERNMENT POLICY AND COMMUNITY PRIORITIES** impact upon what health messages are promoted and why.	The extent to which health messages are consistent across school and home is related to the roles teachers and parents perceive they each play in health promotion and relationships between teachers, parents and children. **THEME B:** **STAKEHOLDER ROLES AND RELATIONSHIPS** impact upon who promotes health, and when and where it is promoted.	The extent to which health is integrated into school life and supported by healthy policies and practices is an important facet of each school's health promotion approach. **THEME C:** **HEALTH PROMOTION APPROACH** impacts upon how health is promoted.	Communication noise, a person's skills and abilities, and environmental conditions can impact upon communication processes and subsequent behaviour within environmental contexts. **THEME D:** Communication and behaviour takes place within **ENVIRONMENTAL CONTEXTS** including factors which may enhance or inhibit health promotions.	

5.2. Source, Receiver and Communication Objective

In school-based health promotion, communication occurs between multiple sources and receivers. Lines of communication exist between external stakeholders, the school, parents and children as shown in Figure 5.1. In this section, all key lines of communication are briefly discussed. As schools deliver health promotions, discussion of other communication components assumes the school as the primary source of communication with children, and, in some instances, parents as the target receivers.

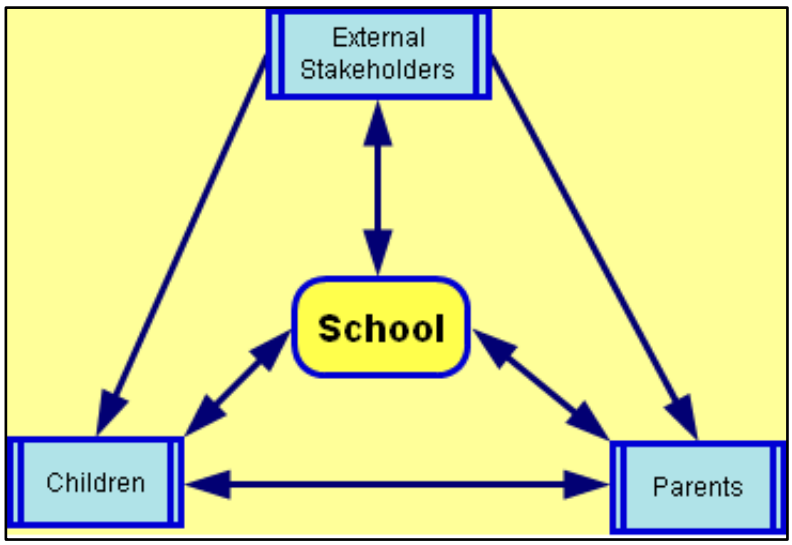


Figure 5.1. Lines of Communication among School Stakeholders

5.2.1. Communication between Schools and External Stakeholders

External stakeholders comprise individuals and organisations working externally to the school; they include government departments, city and district councils, district health boards, non-government organisations, health professionals, food suppliers and sports trusts. External stakeholders have in common the fact that when they initiate contact with schools, they typically do so in order to promote particular health programmes and to encourage involvement in health promotion activities. External stakeholders also offer schools resources for professional development as well as for health and physical education (PE) teaching programmes. Schools typically initiate contact with external stakeholders when seeking training, support or resources to address specific health promotion concerns. External stakeholders, such as food vendors, who sell

children products which are discouraged or prohibited at school are seen by school staff as problematic[42].

5.2.2. Communication between Schools and Children

The central path of communication in school-based health promotion is between the school (source) and children (receiver). Fundamental health promotion objectives for schools are determined by the New Zealand Curriculum Framework, a set of policy statements defining learning principles and achievement aims for all students in all New Zealand schools (Ministry of Education, 2004). The national curriculum statements are flexible thus allowing schools and teachers to tailor promotions to the perceived learning needs of their students and communities. Communication regarding nutrition and physical activity is centred on creating awareness of healthy lifestyles, establishing a positive image of healthy lifestyles through positive associations, and influencing health behaviour. Health promotions are based on the requirements of the curriculum (*government policy*) and whatever health issues schools perceive as *priorities* for their community. Based on key insights outlined in this section, the juxtaposition of government policy and community priorities was identified as one of the underlying themes of communication processes within school-based health promotions. This Theme A is discussed in Chapter Seven (section 7.2, p.129).

The New Zealand Curriculum Framework operates as a *message channel*, created by policy makers, through which health and PE is delivered to children in schools. The curriculum is the official policy for teaching, learning, and assessment. Schools operate within a set of National Education Guidelines (NEGs) which include National Education Goals, foundation curriculum policy statements, national curriculum statements and National Administration Guidelines (NAGs). Under the Education Act 1989, every school Board must prepare and maintain a school charter which establishes the mission and objectives of the school. The charter must be prepared and updated in accordance with the NAGs (Ministry of Education, 2008a).

The focus of this research is nutrition and physical activity health promotions. Over the study duration (2004-2008), the New Zealand government enacted several legislative changes in education regarding these topics[43]. Effective from Term 1, 2006, was an addition to the NAGs requiring schools to implement programmes which "give priority to regular quality physical activity". Then, in September 2006, the government launched *Mission-On*, a $67 million interagency campaign designed to improve nutrition and increase physical activity among children and young

[42] It is noted that the sale of confectionery (and/or other unhealthy food products) as a school fundraising method also sends messages to children that conflict with healthy eating concepts taught and practiced at school.

[43] The enactment of changes to curriculum requirements regarding nutrition and physical activity did not affect the research focus of this study, but did contribute to the findings as an important influence on school-based health promotions.

New Zealanders (New Zealand Government, 2006). The *Mission-On* package includes ten initiatives. Two are relevant to this study and are the joint responsibility of the Ministries of Health and Education: improving nutrition in schools and early childhood education (ECE) services, and school-based health promotion. In March 2007, new Ministry of Health food and nutrition guidelines were distributed to schools. The guidelines, which form part of the *Mission-On* package, are designed to assist schools in creating healthy eating environments for students. As of June 2008, boards of trustees are required to promote healthy food and nutrition for all students; and where food and beverages are sold on school premises they must have only healthy options available.

In summary, schools are required to operate in accordance with the national curriculum framework which is administered by the New Zealand government. Recent changes to the curriculum have strengthened the framework for promotion of nutrition and physical activity, requiring schools to focus on these topics and ensure the school environment supports healthy practices. The curriculum framework sets out the prescribed objectives for health promotions and is the channel through which they are delivered to children. Schools tailor the curriculum to their students, determine messages and select communication tools accordingly.

The key point here is that communication processes within school-based health promotions are unique and this is due to the influence of government policy in the guise of curriculum. As such, the *a priori* conceptual framework of this study does not fit the case data. In the *a priori* model, it was proposed that communication involved schools (source) having a communications objective, which was then transformed into a message, delivered via a message channel. The findings, however, show that schools (source) have prescribed (by government) communications objectives, which they then transform into messages which can be delivered via a prescribed message channel (curriculum). This important perception contributed to the impetus for revising the conceptual framework. My revised *a posteriori* framework, presented in section 5.8, accordingly incorporates new knowledge which more accurately illustrates communication processes within school-based health promotions.

5.2.3. Communication between Schools and Parents

In the *a priori* conceptual framework, the *source* of communication within school-based health promotions was thought to be schools, primarily communicating health messages to children (receiver). In applying the framework, though, it was found that as well as communicating health promotion messages to children, schools also attempt to communicate with parents regarding health and PE. The objective of such communication is typically to inform parents about current promotions. Teachers may, however, initiate communication with parents in order to not only increase *parents"* awareness of healthy lifestyles but also to influence *parents"* health behaviours.

Additionally, schools may contact parents if they have a particular health concern regarding a child. From the schools‘ perspectives, parents rarely initiate contact unless they are concerned about something. Teachers feel parents are largely initiating communication to complain; there are few instances when parents contact the school simply for the purpose of conveying positive feedback. These findings indicate that communication within school-based health promotions is not limited to the transfer of messages between schools and children. Rather, findings from this investigation highlight that schools and parents also communicate directly with each other for health promotion purposes. This new appreciation was gleaned through applying my *a priori* framework. Ultimately, the new awareness contributed to the impetus for revising the framework to more accurately represent communication processes within school-based health promotions as they occurred in the six school cases.

5.2.4. Communication between Parents and Children

Based on the discussion in section 5.2.3 above, we now know that communication within school-based health promotions occurs between schools and children *and* between schools and parents. Additionally, children are exposed to health communications at home, so communication also occurs between parents and children. The important point to note is that *school* and *home* are the two main environments from within which children receive health messages and the extent to which these messages are consistent with each other is unclear. Schools primarily make assumptions about health communication at home based on their interactions with, and observations of, children when they are at school. School staff perceive that health messages children receive from their parents, and from within the home environment, are varied; they range from being either consistent with, or contradictory to those messages which are promoted at school. The extent to which the home or school is the foremost source of health promotion for children is thus also unclear. These findings indicate that the *roles* teachers and parents perceive they play in health promotion is an important element of communication. The concept of stakeholder roles, based on these insights (among others discussed in this chapter), therefore, forms part of communication Theme B. Theme B focuses on stakeholder roles and relationships in health promotions and is discussed in Chapter Seven (section 7.3, p.140).

As stated, the second component of Theme B is stakeholder *relationships,* which was also found to be an important aspect of communication. This is because despite the rhetoric of partnerships between schools and families in promoting healthy behaviours to children, schools perceive they often carry the majority of the burden. Schools have little knowledge of what health concepts are discussed and practiced at home. They feel many parents have relinquished their responsibilities to reinforce, or be involved in teaching children positive health behaviours. In this

study, though, the parent survey[44] showed that as far as some parents are concerned, the school reinforces or supports positive practices *already* in place at home. This indicates that some parents perceive they are actively promoting healthy nutrition and physical activity behaviours, while school staff perceive some parents, for whatever reasons, are achieving this to a lesser degree, or perhaps not at all. Thus, there is a tension of perception with some parents believing they are leading nutrition and physical activity health promotion, while staff often perceive that the school is leading. Ultimately, schools focus their health promotion efforts on children and continue to work towards positive outcomes, regardless of what they perceive home environments might be like. From this discussion we can, therefore, see the significance of *relationships* (or lack thereof) between teachers and parents in facilitating school-based health promotions. Hence these insights contributed to communication Theme B, Stakeholder Roles and Relationships, which is discussed in Chapter Seven (section 7.3, p.140).

5.3. Message and Communication Tools

In my *a priori* conceptual framework of communication processes within school-based health promotions, the intent of the *message* construct was to represent health messages delivered by schools to children. Based on the discussion in section 5.2.2, we know that the New Zealand Curriculum Framework outlines the requirements of schools for the delivery of health and PE. In the case of health promotion, the curriculum framework serves as both a foundation from which schools can develop messages and also a channel through which those messages can be delivered. Across the schools in this study, a variety of key food, nutrition and physical activity messages are promoted.

Schools aim to teach children about topics such as food groups (e.g. fruit and vegetables, dairy products, breads, cereals and grains etc.), the importance of drinking water, healthful foods and the benefits of consuming different types of foods (e.g. their vitamins or mineral components). Broader healthy eating messages include consumption in moderation, so children learn, for instance, that treat foods can be enjoyed, but not necessarily every day. The impacts of diet and exercise on the body and the body‘s functions are also key messages. Particular emphasis is placed on highlighting the importance of healthy eating and exercise for brain function and learning. PE involves both participating in, and learning about, the benefits of physical activity. Activities enable students to improve their health and fitness, develop motor skills, and learn about the social dimensions of sport, such as sportsmanship, competition and team work.

In addition to identifying *what* messages are promoted to children by schools, the *a priori* framework was also used to explore *how* messages are delivered. This was achieved by investigating the communication methods used by schools to deliver health promotions, based on the tools used

[44] The parent survey is discussed in detail in Chapter Six.

by marketers outlined in the conceptual framework. Primary types of marketing communications tools include mass media advertising, online advertising, sales promotions, point-of-purchase displays, direct mail, publicity, event sponsorships and personal selling. These types of communication constitute what is traditionally known as the ‗promotion' component of the marketing mix (Chitty et al., 2005). The following discussion examines tools used in school-based health promotions, how they are applied, and the degree to which schools perceive these methods to be effective[45].

5.3.1. Personal Selling

Personal selling refers to person-to-person communication in which a salesperson informs, educates and persuades prospective buyers to purchase the company's products or services (Chitty et al., 2005). This is the primary method of communication used by schools. The main purpose of personal selling is to educate customers; teachers are, therefore, effectively ‗salespeople' who inform, educate and persuade children (i.e. ‗buyers') to undertake healthy nutrition and physical activity practices. Teachers, of course, not only routinely deliver health and PE through classroom learning and physical activities, but also periodically discuss food and lunches with children. Classroom learning is supported by other resources such as the Life Education Trust mobile classrooms, and health and PE representatives who come into schools to talk to children about health topics, to teach sports skills and/or to involve children in other health promotion activities. Modelling behaviours is thus important, and teachers make an effort to eat healthily and be active at school. Furthermore, children are encouraged to be role models for their peers and families too.

As a marketing communications tool, personal selling offers a number of advantages over other communication methods. These benefits also hold in school-based health promotions. Personal selling involves face-to-face interaction, meaning it is difficult for children to avoid teachers' messages. Teachers can communicate complex information and customise messages to the specific interests and needs of their children. The two-way nature of communication in personal selling is such that feedback is immediate. Teachers can establish quickly whether or not children appear to understand the information and can modify their lessons accordingly. In a commercial sense, salespeople can also use their presentations to demonstrate a product's functionality and performance. While school-based health promotions do not necessarily involve specific products, there are situations in which teachers may use demonstrations. Teachers may, for instance, show children how to use sports equipment during physical activity (e.g. swing a bat), or demonstrate how to prepare a healthy lunch (e.g. by making salad sandwiches in the classroom).

[45] Parents' perceptions of the communication methods used by schools are discussed in Chapter Six (section 6.4.1, p. 106) and findings from all stakeholders are integrated into the themes discussion in Chapters Seven and Eight.

The major disadvantage of personal selling for most businesses is the high costs involved. Salespeople typically interact with only one customer at a time, and although personal selling is usually more effective than other communications tools, it is often less cost efficient (i.e. when considering the cost to results ratio). For schools, however, teaching can be likened to personal selling, and as a communications tool, represents an effective and efficient delivery mechanism for health promotions. Teachers not only interact with a classroom of students, but also have one-to-one contact with each child thereby providing schools with a unique advantage in achieving effective communication over ‗competitors' (i.e. sellers and marketers of products and ideas which could contribute to *un*healthy lifestyles). Hence, schools have direct and guaranteed access to their target audience and they have the ability to ‗sell' healthy lifestyles through delivery of consistent messages to the same set of children (i.e. ‗customers') on a regular basis.

From this discussion we have established that personal selling is the primary communication tool used within school-based health promotions. This is an important discovery as we now understand how health promotion messages are communicated to children. Moreover, these findings indicate that the *message* construct of the *a priori* conceptual framework is relevant in school-based health promotions. That is, personal selling, as a communication tool within the *message* component of the model, is effective in school settings. This is because the advantages of personal selling recognised by marketers are equally applicable in the context of school-based health promotions. Furthermore, the key disadvantage of personal selling experienced by commercial marketers (i.e. the cost to results ratio) is less of a concern in educational settings as children are a ‗captive' audience when at school.

5.3.2. Public Relations and Advertising

In the *a priori* conceptual framework, numerous communication tools are identified as being potential methods of communication within school-based health promotions. An interesting finding of this research is that schools use a hybrid approach of Public Relations (PR) and advertising methods when seeking to communicate with parents. PR is promotional efforts which are targeted at corporate constituencies such as employees, stakeholders and consumers. They are intended to create goodwill for a company's image (Chitty et al., 2005). The marketing aspect of public relations (known as MPR) can be integrated with other communications tools to promote a company's products or services. Advertising, by comparison, is a mediated form of non-personal mass communication or direct-to-consumer communication, paid for by the advertiser seeking to inform or persuade members of a particular target audience (Chitty et al., 2005).

Promotional material generated and distributed by schools (such as newsletters and letters, which are regularly sent home to parents) can be considered a PR activity. These can include

information about study topics, changes within the school and upcoming events. Schools also display and distribute other forms of advertising material such as posters and pamphlets relating to health promotion topics or activities. However, the degree to which MPR and advertising are effective tools for schools to communicate with parents is uncertain. School staff perceive communicating with parents using such methods is not as effective as communicating with children in the classroom. Teachers are frustrated when they continue to send home letters and newsletters which do not appear to be read as they receive no response from parents.

These findings are important for this thesis because, again, we can see that the communications tools used by marketers (i.e. as outlined in the *a priori* conceptual framework) are applicable in school-based health promotions. The difference, though, is that PR activities and advertising do not appear to be as effective for schools in the delivery of health promotions as they can be for businesses in the promotion of goods and services. Essentially, schools can communicate effectively with children because the communication method used is personal selling. Conversely, PR and advertising may be less effective for communicating with parents because they are less personal forms of communication. Additionally, the indication from teachers that parents are often unresponsive to health promotion information is a crucial point. As schools *and* families are involved in promoting health concepts to children, this is a further finding which highlights the importance of roles and relationships (or lack thereof) among school stakeholders in health promotion. Hence the emergence of communication Theme B, Stakeholder Roles and Relationships, which is discussed in Chapter Seven (section 7.3, p.140).

5.3.3. Sales Promotions

Sales promotions are another form of communication that includes any marketing activities which attempt to encourage consumers to buy a brand (Chitty et al., 2005). Consumer-oriented sales promotions include free samples, contests, coupons and rebates. In school-based health promotions, schools use similar approaches whereby incentives are offered to encourage children to undertake healthy nutrition and physical activity behaviours. Offering free fruit has been one way to encourage healthy eating among children. In this study, School F is part of the government-sponsored *Fruit in Schools* (FIS) initiative to encourage children to eat more fruit and adopt healthier lifestyles. The school receives a free piece of fruit for each child daily (which will continue for up to three years). School E also received free fruit at one time during a period in which they participated in a research programme where children were given different kinds of fruit over a three week period. Principals and teachers perceive these ‗sales promotions' have resulted in positive changes. The provision of free fruit may have nutritional benefits and improve learning. School staff suggest that in order to sustain these benefits, however, parents will need to support school-based activities by including

fruit in their children‘s diet once the promotion period is over. Staff are sceptical as to whether this will happen.

From these findings, it is evident that the use of sales promotions within school-based health promotions can achieve outcomes similar to those we might expect from sales promotions in the commercial sector. That is, sales promotions are incentives designed to move a customer to action (i.e. to try/buy the brand). So, giving children free fruit, for instance, prompts trial of eating that fruit. An important point to note, though, is that while sales promotions encourage trial, the ultimate goal is to achieve routine ‗purchase‘ behaviour. Using the free fruit example, this would mean ensuring children adopt the practice of eating fruit on a daily basis. As indicated by the school staff, this then becomes the responsibility of parents to continue providing children with fruit beyond the sales promotion period. Again, we can see that a partnership approach between schools and parents could be beneficial for achieving consistency of healthy practices at school and in the home. These findings, thus, also contributed to communication Theme B, Stakeholder Roles and Relationships, which is discussed in Chapter Seven (section 7.3, p.140).

5.3.4. Sponsorship and Events Marketing

In the literature, and in marketing communications theory, promoting the interests of a company and its brands by associating them with a specific event is referred to as sponsorship or events marketing (Chitty et al., 2005). This communication tool is also used by schools in a variety of ways to promote nutrition and physical activity. Shared lunches or morning teas designed to promote healthy eating are a common form of event marketing in schools. Schools may also organise events to inform parents, such as holding a demonstration to introduce a new PE programme, or show casing a proposed new range of tuck-shop food at parent-teacher meetings. These forms of communication allow schools to interact face-to-face with children and parents. Like personal selling, events can be used to communicate complex information and the two-way nature of the process results in immediate feedback. This is an important point because sponsorship and event marketing appear, therefore, to be more effective communication tools for schools than PR and advertising. Schools also promote and participate in commercially sponsored events. These are typically large-scale school-based activities (e.g. *Push Play Day*[46]), or external sports events (e.g. *Weetbix Triathlon*[47]). Events can have a significant impact on children by providing a unique experience and one which portrays physical activity (or nutrition) in a positive way.

[46] The annual day SPARC promotes physical activity and encourages people to be active.
[47] An event designed for children, sponsored by food manufacturer Sanitarium, who produce the breakfast food Weetbix.

5.3.5. Publicity

Publicity is not a commonly used tool through which schools communicate with children or families in health promotions. The presence of health issues in the wider media, however, does impact upon schools. Nutrition, physical activity and obesity continue to be topical issues and schools consider their efforts to address such issues to be consistent with those highlighted in the media. In fact, the regularity of publicity surrounding the promotion of nutrition and physical activity has perhaps prompted schools to increase their efforts further. As is discussed in Theme D, Environmental Contexts (presented in Chapter Eight), the media has a number of potential impacts on communication processes of school-based health promotions and subsequent health behaviours.

5.4. Message Channel

In the *a priori* communication framework, the message channel is taken to mean the path through which the message moves from source to receiver. Businesses commonly deliver brand messages to consumers using channels such as television, radio, newspapers, billboards and point-of-purchase signage. In school-based health promotions, where the primary method of communication is personal selling, messages are delivered directly from teachers to children (and sometimes parents). Messages also reach parents indirectly, through word-of-mouth communication from children.

As noted in section 5.2.1 (p. 82), the primary channel through which school-based health promotion is delivered is The New Zealand Curriculum Framework. As also noted, each individual school curriculum is devised by teams within the school. The broad national curriculum framework presents only basic requirements for health and PE thereby leaving schools to identify promotions and activities which can be used to implement general curriculum themes. Selection of programmes and activities is largely determined by suitability, ease of use, value for money, timetabling factors and sustainability. Schools identify the needs of their children and community, and focus on specific health issues accordingly. Again, health promotions at each school are underpinned by whatever health issues, if any, are perceived as *priorities* for the community. Although priorities differed for individual schools in this study, the six case schools sampled indicated that nutrition and physical activity were important. These findings, among others, contributed to communication Theme A, The Juxtaposition of Government Policy and Community Priorities, which is discussed in Chapter Seven (section 7.2, p.129).

The extent to which health promotion initiatives are integrated into school life is an important facet of each school‘s approach to health promotion. Schools endeavour to include promotions which can be implemented over a significant period of time, or better yet, be incorporated into daily school activities. Additionally, food and nutrition policies play an important

part in establishing the school environment as one which supports the healthy eating messages teachers communicate to children. Policies typically relate to eating and break times, the foods sold in the school tuckshop, and the foods children bring from home. Overall, schools recognise that in order for communication of messages about food, nutrition and healthy eating to be effective, the school environment needs to support healthy behaviours. In this way, a school can achieve a holistic approach to health, whereby both learning and the wider school environment are consistent in promoting healthy practices. This notion of integrating health concepts into school life forms the basis for communication Theme C, Health Promotion Approach, which is discussed in Chapter Seven (section 7.4, p.151).

5.5. Communication Noise

Within communication theory, the term *noise* refers to anything which distorts or disrupts a message, or may interfere during the communication process (Chitty et al., 2005). Three main forms of noise are physical noise, psychological noise and semantic noise (Devito, 1994; O'Sullivan, Hartley, Sanders, & Fiske, 1988). Physical noise, such as a startling sound, or someone talking in the background, interferes with the transmission of a message. Psychological and semantic noise can lead to distortions in receiving and processing information. Psychological noise results from preconceived biases, stereotypes, prejudices and assumptions. Semantic noise is a function of the differences in meaning people assign to words, to voice inflections in speech, or to gestures and expressions. Semantic noise also includes jargon, technical, or complex terms which leads to confusion or misinterpretation of the intended message.

The term ‗noise' has a seemingly negative connotation; it implies a disruption or some form of negative interference to the process of communication. That is what the literature uniformly seems to suggest. Yet, the findings of this study suggest that there are factors which impact upon communication processes which can create both negative *and* positive noise. Advertising of unhealthy food products, for instance, can be categorised as a form of negative noise. That is, the advertising of unhealthy foods may *inhibit* the communication of messages promoting healthy eating. Conversely, advertising may also create positive noise, as in the case of social marketing campaigns which promote healthy nutrition and physical activity practices. Messages promoted through such campaigns are typically consistent with those promoted at school and, therefore, the campaigns *enhance* school-based communications. The fact that there are forms of ‗noise' which may enhance or enrich communication processes is not documented in literature. Positive noise is, therefore, a new dimension that has emerged as a consequence of this study and I would propose that it represents an important extension to the construct of noise in communication processes. Indeed, the findings presented in Chapter Eight will amplify this contention.

Alongside noise, there are also other factors which can enhance or inhibit the behavioural outcomes component of the communication process. As shown in the *a priori* conceptual framework (p.41), a person's performance of behaviour is impacted upon by their skills and abilities, and environmental constraints. The findings of this study show that communication and subsequent behaviour takes place within different environmental contexts, and within those contexts, factors such as a person's skills and abilities, communication noise and environmental *conditions* (including constraints) can *enhance* or *inhibit* communication processes. These factors include, for example, drivers and leaders in the school environment, lifestyles and life skills in the home environment, advertising and television programming in the media environment, the availability and accessibility of food in the retail environment and transport systems in the physical environment. *Environmental contexts* were, thus, identified as one of the underlying themes of communication in school-based health promotions and forms Theme D. Theme D is discussed in detail in Chapter Eight.

Analysis of the noise component of communication, based on the school cases, also indicates the *a priori* conceptual framework of this study is inconsistent with the data. In the *a priori* framework, noise was thought to impact upon the source, the message, the message channel and feedback components of communication. Performance of a given behaviour was thought to be a function of whether a person has a strong intention to perform the behaviour, the necessary skills and abilities to do so, and whether there are environmental constraints preventing performance of the behaviour (Fishbein, 2000; Fishbein et al., 2003). The framework does not, however, convey the notion of different factors (noise, skills and abilities, and environmental conditions) within different environmental contexts, which can either *enhance*, or *inhibit*, *any* stage of the communication process (including subsequent behaviour). Again, these findings indicate that a revised model is needed to better illustrate communication processes within school-based health promotions as observed in the data. A revised model is thus presented at the conclusion of this chapter.

5.6. Communication Outcome

In the final stage of communication, the target audience experiences outcomes in response to messages received from a brand communicator (Chitty et al., 2005). In theory, outcomes should ideally match communication objectives. In the case of school-based health promotions, the objectives revolve around creating awareness of healthy lifestyles, establishing a positive image of healthy lifestyles through positive associations, and influencing health behaviour. An important application of my *a priori* conceptual framework was thus to explore whether the targeted audience (i.e. the children), did in fact experience the desired response outcomes as a consequence of messages received from the brand communicators (i.e. teachers). This is the focus of the following discussion.

5.6.1. Children's Health Knowledge, Attitudes and Behaviours

In order to examine the impact of school-based health promotions on children's health knowledge, attitudes and behaviour, focus groups were conducted at each school. As stated, these sessions were conducted with a view to investigating whether or not children experience the intended outcomes as a consequence of health promotion messages received from schools. It was found that children learn and develop knowledge about health from a range of sources including school (teachers), home (parents and family), doctors, library/books, nutrition labelling and the media (television, radio, and Internet). School-based health promotions include classroom learning (with resources such as the food guide pyramid) and sessions with external promoters such as the Life Education Trust and *Iron Brion.* At home, children suggest the primary messages they receive from their parents relate to food choices and eating practices (e.g. what foods they can eat, when and where they can eat).

With respect to nutrition, children discussed healthy foods (e.g. fruit and vegetables) and unhealthy foods (e.g. confectionery), types of foods they eat regularly (e.g. cereal for breakfast, meat and vegetables for dinner) and the benefits of consuming different types of foods containing compounds the body needs (e.g. calcium in dairy products). Overall, healthy eating is perceived by children to provide energy, keep the body fit and strong, prevent disease and aid the body during times of sickness. More importantly, parents and family are perceived by children as role models for healthy eating. Children suggested the food parents buy and eat is an indication of what they, too, should be eating, and noted it would *not* be good to learn from parents if they were unhealthy eaters.

Children are physically active at school most days, participating in morning fitness, PE sessions and lunch time games. Outside of school, children are active in school or club sports teams, or enjoy riding their bikes after school and playing games with their siblings. Children offered a range of reasons why exercise is important for health, including keeping fit and healthy, staying in shape, developing strong bones and preventing weight gain. As with eating behaviours, children consider role models important in physical activity and look to their parents, peers and professional athletes for motivation to achieve fitness goals.

Views on obesity and wider health issues indicate children consider over-eating and inactivity to be the main causes of obesity, which they believe is a problem in New Zealand. They suggest people eat more fruit and vegetables, eat less high fat and sugar foods, and exercise regularly. Again, children highlighted the role of parents in cooking meals, providing a healthy diet, encouraging children to be active and being a role model for their children.

Overall, children in some cases did directly attributed their health knowledge to school-based health promotions. However, it is evident that they also, understandably, learn about health

from other sources which also shape their attitudes towards health and their health behaviours. Hence, due to the multiple influences impacting upon children's health behaviour, the communication process espoused within the *a priori* conceptual framework (Figure 5.2, p.98) may not be borne out. Instead, the revised *a posteriori* model, which appears at the conclusion of this chapter (section 5.8, Figure 5.3, p. 99) demonstrates greater validity in illustrating communication processes within school-based health promotions as observed in the six school cases.

5.6.2. Outcome Evaluation

In addition to investigating the promotion outcomes experienced by children, this research also explored the measures used by the six schools to *evaluate* such promotion outcomes. This is an important aspect of the *communication outcome* component of the *a priori* framework because evaluation of health promotions is integral for monitoring progress, refining promotion elements and explaining or measuring promotion outcomes (Baranowski et al., 2000; Ovretveit, 1998). Based on interviews with school staff it was found that assessment of PE is a requirement in schools and formal measures are used for certain programmes. One programme which school staff identified as having a robust evaluation component is the *Perceptual Motor Programme* (PMP). The programme is a motor coordination programme designed to develop children's motor skills and progress is closely monitored with evaluations during each session of the programme. Another health promotion which includes evaluation measures is the FIS initiative that School F is involved in. Staff were uncertain about the exact nature of the evaluation process, but presumed that as a large-scale government funded initiative, FIS would be monitored. In fact the New Zealand Council for Educational Research (NZCER) and Health Outcomes International (HOI) *are* conducting an evaluation of the FIS initiative (New Zealand Council for Educational Research, 2008b). The evaluation project, entitled ‗Healthy Futures', has been contracted by the Ministry of Health and is being conducted over 2005-2009.

Overall, according to school staff across the schools, the effectiveness of other nutrition-focused health promotions is generally not measured formally. Rather, teachers and principals make perceptual evaluations, guided by feedback from children and parents, and any changes they observe in children's knowledge, attitudes and behaviours. Although, school staff offered largely positive observations on the outcomes of school-based health promotions, the lack of formal evaluation procedures is a significant point to consider. This is because evaluations could help schools to determine whether or not their health promotions have achieved the intended outcomes. Schools could, thus, use information learned through the evaluation process to determine when to use a particular promotion, how to improve, extend or modify it, or whether it should continue (Ovretveit, 1998). Indeed, as noted in Chapter Two (section 2.2.2, p. 14), New Zealand-based research regarding childhood obesity prevention programmes (Auckland Regional Public Health Service,

2006) found that there is a need for schools focusing on obesity prevention to clearly state their objectives and measure appropriate outcomes. Ultimately, the important point to note for this thesis is that evaluation of communication outcomes, ideally, should be an integral component of communication processes within school-based health promotions. If implemented, evaluations could significantly improve the efficiency and effectiveness of those promotions.

5.7. Feedback

In the *a priori* conceptual framework for this research, feedback is the final component of communication processes within school-based health promotions. Feedback during communication provides the source with a mechanism for examining the accuracy with which intended messages are being received and whether communication is achieving the intended objective (Chitty et al., 2005). In school-based health promotions, feedback from children is generally immediate, allowing teachers to modify communication as required. Classroom teachers work with the same class of students each day and are able to develop relationships with them, which is excellent for fostering feedback. Teachers may obtain feedback directly during school-based activities, or may simply observe changes in children's attitudes, knowledge and behaviours. These changes indicate to staff that the messages of school-based health promotions are being received by children and having an impact on them. However, as discussed in the section above, formal evaluation procedures could provide more objective feedback for schools pertaining to the health promotions they implement. Regardless, the significant detail for this thesis is that feedback *does* occur within school-based health promotions. I can thus confirm, based on the evidence which emerged during this study, that the feedback component of the *a priori* conceptual framework is valid and hence have included it in the revised *a posteriori* framework presented at the conclusion of this chapter.

5.8. Summary and Revised Conceptual Framework

Using a deductive approach (i.e. *top-down*), a conceptual framework was designed to illustrate, theoretically, communication processes within school-based health promotions. This *a priori* model was devised, initially, as a result of the literature review process conducted prior to data collection. In this chapter, the discussion has detailed how observed data was analysed using this *a priori* framework. An important function of this chapter was, thus, to present key insights learnt by applying the *a priori* framework. These insights lead to the emergence of four communication themes, namely, the juxtaposition of government policy and community priorities (Theme A), stakeholder roles and relationships (Theme B), health promotion approach (Theme C) and environmental contexts (Theme D). Themes A, B and C are presented in detail in Chapter Seven, while Theme D is discussed in Chapter Eight.

Moreover, by examining each component of communication, we learnt that the *a priori* framework was in fact inadequate for the case data. Table 5.2 provides a summary of new knowledge learnt through applying the framework. Consequently, using instead an inductive approach (i.e. *bottom-up*) to conceptualising communication processes, I developed an *a posteriori* framework based on the observed case data. The *a posteriori* framework is presented and discussed at the close of this chapter. Note both the *a priori* and *a posteriori* frameworks are included (Figure 5.2, p. 98 and Figure 5.3, p. 99 respectively) to illustrate the differences between the two models.

Table 5.2. New Knowledge Learnt Regarding Communication within School-based Health Promotions

Original Communication Path (*a priori*)	**New Knowledge**	**Revised Communication Path (*a posteriori*)**
SOURCE has COMMUNICATION OBJECTIVE transformed into MESSAGE(S) delivered via MESSAGE CHANNEL.	The New Zealand Curriculum Framework operates as a message channel, created by policy makers, who influence the objectives of health and PE.	SOURCE (School) has a prescribed (by Government) COMMUNICATION OBJECTIVE & MESSAGE CHANNEL (curriculum). SOURCE (school) then transforms the COMMUNICATION OBJECTIVE into MESSAGE(S) delivered via MESSAGE CHANNEL (curriculum).
RECEIVER experiences a COMMUNICATION OUTCOME.	Through classroom learning and physical activities, school-based health promotions expose children to positive health messages, teach children skills needed to engage in positive health behaviours, and provide opportunities to engage in those behaviours.	RECEIVER experiences a COMMUNICATION OUTCOME in the form of changes to COGNITIVE VARIABLES (knowledge and attitudes), BEHAVIOURAL INTENTION and BEHAVIOUR. RECEIVER develops SKILLS AND ABILITIES to perform BEHAVIOUR.
COMMUNICATION NOISE impacts upon the SOURCE, MESSAGE, MESSAGE CHANNEL and FEEDBACK components of communication.	A variety of factors can either enhance or inhibit *any* stage of the communication process. These factors are a combination of communication noise, skills and abilities, and environmental conditions.	COMMUNICATION and SUBSEQUENT BEHAVIOUR takes place within a number of environmental contexts and is impacted upon by factors within those contexts including communication noise, a person's skills and abilities, and environmental conditions.

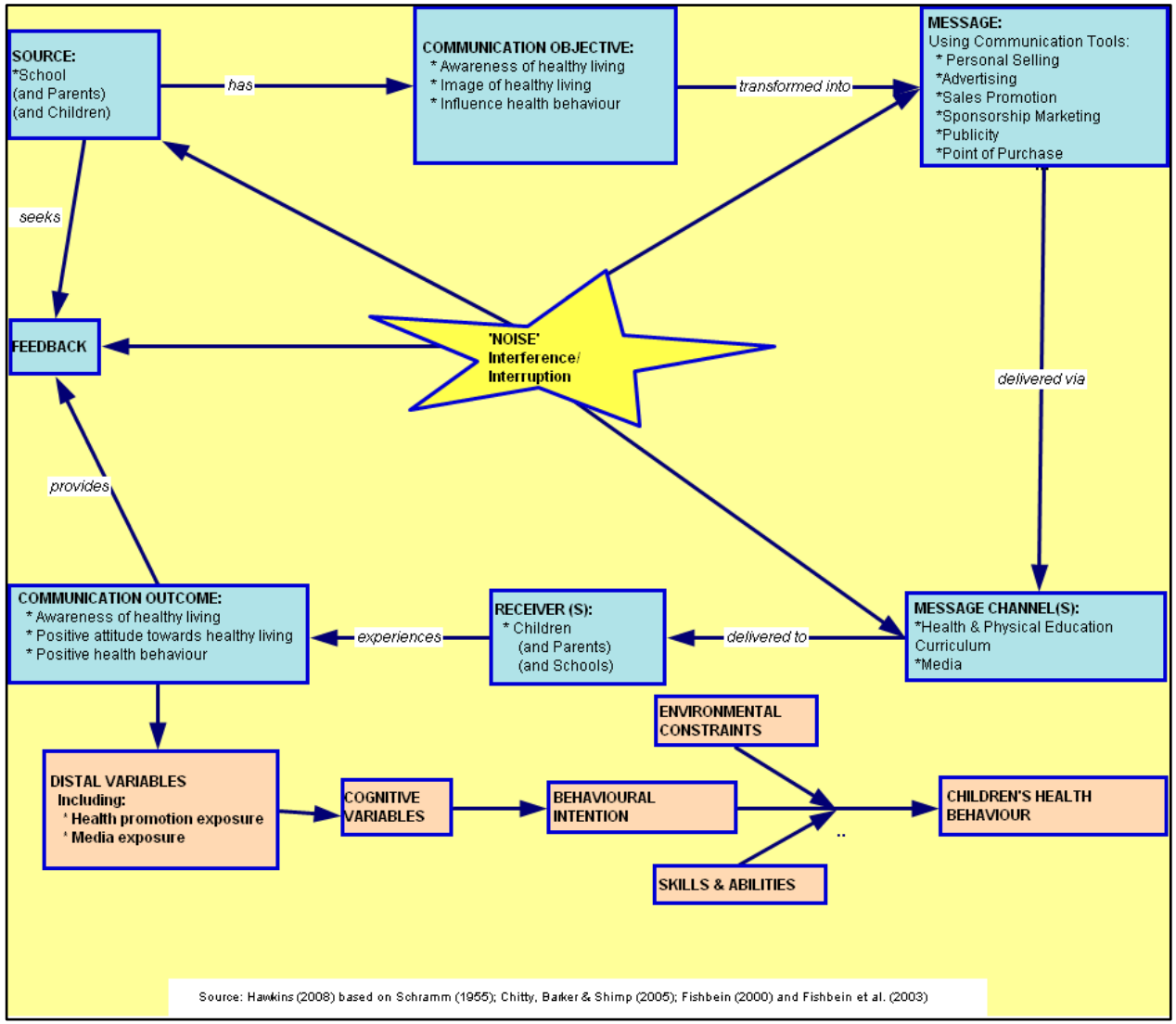
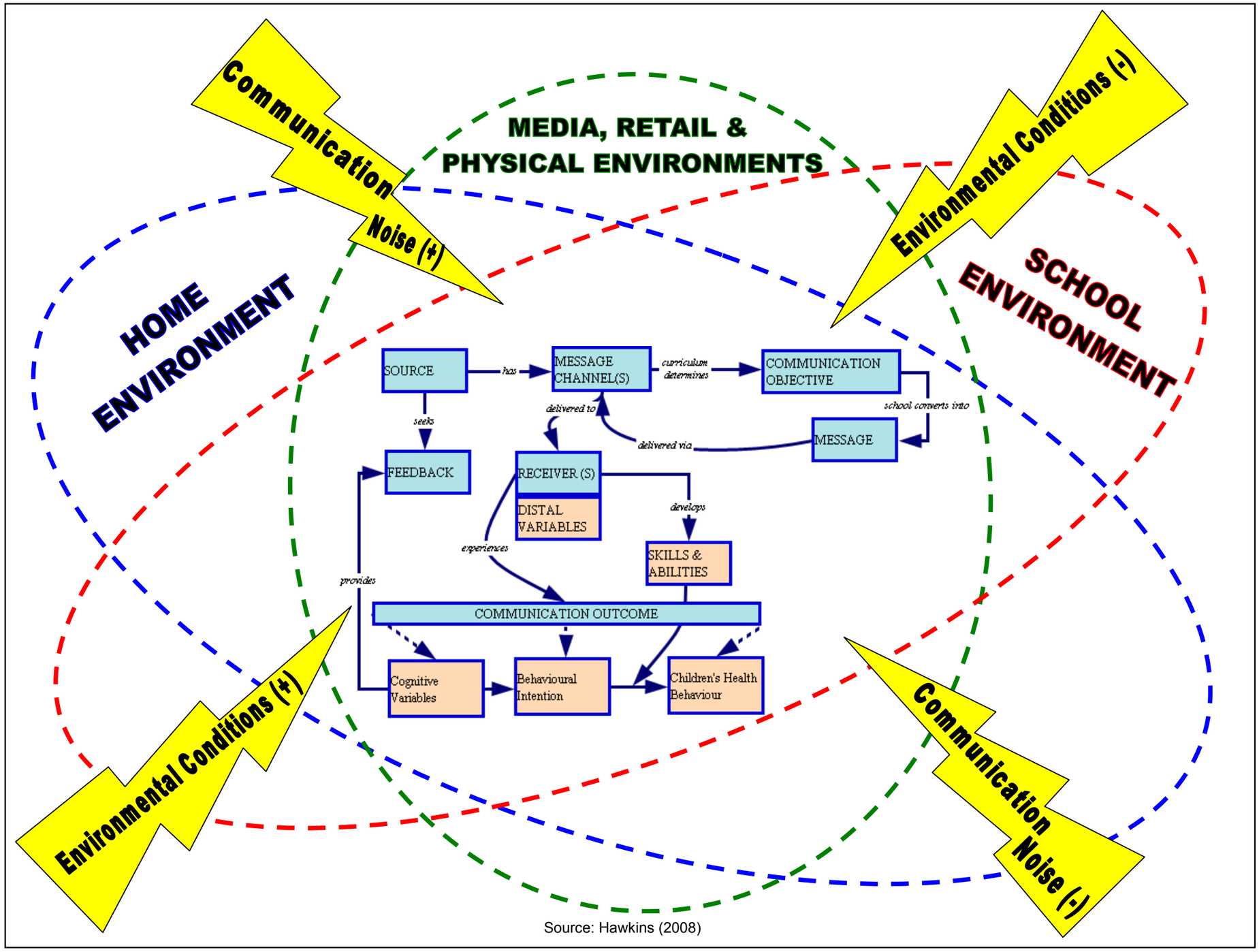


Figure 5.2. Communication Processes within School-based Health Promotions (*a priori*)



Source: Hawkins (2008)

Figure 5.3. Communication Processes within School-based Health Promotions (*a posteriori*)

In the *a posteriori* framework, schools (source) have a prescribed message channel (the Health and PE curriculum) designed to deliver messages to children (receiver). The fundamental communication objectives, to influence children‘s awareness, attitudes and behaviours with respect to nutrition and physical activity, are required by the curriculum. Schools then tailor messages to the needs of their community and deliver them through the curriculum using communication tools such as classroom learning (i.e. personal selling) and organised sports events (i.e. sponsorship marketing).

Children are exposed to health messages through communication, but also develop skills and abilities through school-based activities which enable them to engage in positive behaviours. Communication is effective when the message sent by the school is received and understood by the children. Feedback occurs when children respond to the message. Behavioural elements are included in the communication outcome component of the framework. The outcome of communication is the impact school-based health promotions have on children‘s health knowledge, attitudes and behaviours (cognitive variables, behavioural intention and behaviour). Additionally, a variety of factors including communication noise, a person‘s skills and abilities, and environmental conditions can impact upon communication processes and subsequent behaviour. These factors exist within the environmental contexts in which communication and behaviour takes place.

As expected, in school-based health promotions, the school is the primary source of communication, with children as the primary receivers. The findings of this study show, however, that schools, parents and children may be both sources and receivers. While school-based promotions are primarily targeted at children, messages from schools (and children) may also be targeting parents. Likewise, by conversing with children and through their own behaviours, parents are sending messages to children about health. Although single communication interactions between sources and receivers may not achieve great changes in behaviour, the combined effect of multiple consistent messages over time, integrated across the environments, is likely to contribute to positive health behaviours among children.

PART THREE
RESEARCH FINDINGS AND RESULTS

Part Three, containing Chapters Six, Seven and Eight, presents the results and findings of this research. Chapter Six is the Parent Survey Results. The chapter includes results and discussion of the regression analysis conducted with responses to the questionnaire completed by parents. Chapters Seven and Eight comprise an integrated discussion of findings and results from all school stakeholders presented as four themes (as introduced in Chapter Five). Theme A relates to the juxtaposition of government policy and community priorities, Theme B focuses on stakeholder roles and relationships, Theme C is concerned with health promotion approaches and Theme D examines factors associated with the environmental contexts in which communication processes take place.

A notable characteristic of the themes is that dimensions of Themes A, B and C largely affect the ‗process' components of communication within health promotions. This arises through impacts upon senders, communication objectives, messages, message channels and communication tools. By comparison, Theme D illustrates factors largely impacting upon the final stages of communication, ‗communication outcomes', including children's cognitions about healthy behaviours and whether or not they engage in those behaviours. Themes A, B and C are, therefore, grouped as *Communication Themes* and presented in Chapter Seven, while Theme D pertains to the *Environmental Contexts* of communication and is presented in Chapter Eight. In both chapters key ideas are illustrated with case evidence and are critically linked to supporting literature. Implications for theory and practice are also suggested.

CHAPTER SIX
PARENT SURVEY RESULTS

6.1. Chapter Overview

In order to determine parents' views on school-based health promotions, and complement the data collected from school staff and children, a self-completion questionnaire was used to survey parents at the six schools. This chapter presents results of that survey. The results show parents' perceptions of nutrition, physical activity, and obesity-related issues are significantly related to demographic factors, such as gender, age, socio-economic status and ethnicity. Moreover, these results support the four communication themes[48] of school-based health promotions identified through qualitative analysis, and the proposed *a posteriori* model of communication processes. The results provided evidence of factors within the home and wider environments that impact upon health promotion communication and behaviour. The chapter concludes with a summary of the discussion.

6.2. Questionnaire

One objective of this study has been to explore *health* by analysing school stakeholders' perceptions and expectations of health promotions, and, thus, determine the impact of communication processes on implementation of promotions and promotion outcomes. In order to measure parental perceptions of school-based health promotions, a self-completion questionnaire was distributed to families of children who attend each of the six schools in the study. The questionnaire focused on nutrition and physical activity issues, and the relationship between school-based health promotions and children's diet and exercise behaviours.

Across the six schools, a total of 1396 questionnaires were distributed to parents between February 2005 and December 2006[49]. 229 completed questionnaires were returned. Response rates for each school ranged from 6% to 28%, with the average response rate at 16%. Response rates were lower for the mid and low decile schools than for the high decile schools; the lowest response rate was from School E, a decile one school with a high proportion of children from non-English

[48] Theme A: The Juxtaposition of Government Policy and Community Priorities; Theme B: Roles and Relationships; Theme C: Health Promotion Approach; and Theme D: Environmental Contexts, as indicated in Chapter Five and discussed in Chapters Seven and Eight.

[49] Data was collected at School A in February 2005 as a pilot case and at the other five schools throughout 2006. Distribution figures represent the number of questionnaires prepared for each school, not the number of parents who received questionnaires. As schools distributed questionnaires to parents via students, there were likely parents who did not receive one, if, for instance, their child was absent on the day of distribution or the child failed to give the questionnaire to their parents.

speaking backgrounds[50]. In order to compensate for low response rates, schools have been grouped into low, mid and high decile pairs when referring to the results. Response rates for each pair are shown in Table 6.1.

Table 6.1. Questionnaire Response Rates for Low, Mid and High Decile Schools

Decile Grouping	Questionnaires Distributed	Completed Returned Questionnaires	Response Rate
High (School A & B)	507	129	25%
Mid (School C & D)	547	59	11%
Low (School E & F)	342	41	12%
TOTAL	1396	229	16%

6.3. Data Analysis

As discussed in Chapter Three (section 3.4.2, p. 61), data were gathered to explore variables which focus on factual matters; attitudes, opinions and beliefs, and; past, present and intended behaviours (Hansen, 2008). Beyond the generation of descriptive statistics, questionnaire data were analysed using single equation regression models. In the single equation specification, behaviour of a single dependent variable (Y) can be explained with a number of independent variables. In this survey, dependent variables are either binary or ordinal variables, requiring a special type of empirical analysis which captures the binary or ordinal nature of the data. A probit model can be applied where the dependant variable is either nominal or ordinal, and the independent variables can be any mix of qualitative and quantitative predictors. In this study, probit models were used for binary choice questions, such as when modelling *yes* or *no* response variables. Parents were asked, for instance, two questions about whether or not they had noticed any short term or long term differences or changes in their child‘s health behaviours as a result of the health programmes operating within their child‘s school. The outcome was binary (either the parents noticed changes or they did not), so a probit model was appropriate because it handles this feature correctly[51].

[50] The principal at School E anticipated a low response from parents, suggesting the non-native English speakers and those with low literacy levels in the community would find the questionnaire difficult to understand. She was not, however, in favour of translating the questionnaire, indicating their school preferred not to translate materials for parents into different languages. The ethnic composition of the school is varied such that it is difficult to determine which languages to use and materials, if poorly translated, would likely offend. Additionally, the principal suggested use of translated materials itself could offend, by implying parents are incapable of understanding English.

[51] For further information regarding probit models see Kennedy (2003).

For response variables with ordinal outcomes, such as those ranked on a Likert-scale, ordered probit models were used. The ordered probit model is a natural extension of the binary probit model when two or more alternatives are ordered. With respect to health knowledge, for example, parents' understanding of healthy eating and exercise principles was modelled with ordered probit regression, with the dependent variable ranked on a scale where 5 = excellent and 1 = poor. For both the probit and ordered probit regression models the independent variables included parents' demographic characteristics i.e. gender, age, ethnicity and number of children, as well as school characteristics, namely the decile rating of their child's school and whether it is a Health Promoting School or not.

The empirical model can be shown as follows:

$$Y = \alpha_0 + \alpha_1(GENDER) + \alpha_2(BIRTH\_YEAR) + \alpha_3(KIDS) + \alpha_4(DECILE) + \alpha_5(HPS) + \beta_i(ETHNICITY) + \varepsilon$$

Where α_0 is the intercept term. α_1 (GENDER) is a dummy variable that takes the value of 1 if the respondent is male and 0 otherwise. α_2 (BIRTH_YEAR) is the year the respondent was born. α_3 (KIDS) represents the number of children the respondent has. α_5 (HPS) is a dummy variable taking the value of 1 if the respondent has children attending a Health Promoting School (HPS) and 0 otherwise. β_i (ETHNICITY) is a vector of dummy variables for three different race groups: NZ European, Asian, and Māori and Pacific Islanders. ε is the error term.

6.4. Empirical Results

Empirical results of the questionnaire are presented in the following sections. The discussion includes only questions for which statistically significant results were obtained. The statistical significance of the variables was determined using p-values[52]. In total, the results of 25 regressions are reported, corresponding to 25 of the questions asked in the questionnaire. As shown in Table 6.2 these results have been grouped into seven conceptually derived topic areas informed by the content of each question. Findings from open-ended questions have then been incorporated into the ensuing discussion. Summary statistics for each question are then presented in Appendix C, p. 262for those wishing to examine the summary statistics in greater detail.

Given the exploratory and grounded methodological approach that informed this research, hypotheses (and hence predictions) about what might be found were not made as they were simply not on the radar of expectations. The data, were, however, assayed for possibilities. This means

[52] A p-value indicates the likelihood that the coefficient for a given independent variable emerged by chance. In this analysis, statistical significance is indicated at the 1%, 5% and 10% levels. When a relationship is stated as being significant at the 5% level, for example, this means the p-value was 0.05 and that there is a 5% chance that the relationship emerged randomly and a 95% chance that the relationship is real.

analyses were completed and critical commentaries were then generated together with assessments of what may have been expected (or not). Such commentaries are not treated separately but rather, have been fused throughout the ensuing discussion and are consistent with triangulation having occurred.

Table 6.2. Summary of Regression Analysis

Topics investigated with Section/Table references given for results reported	Specific Questions Analysed using Regression Model	Response Options
Changes in Children's Health Behaviour Section 6.4.2, p. 107 Table 6.4. Changes Resulting from Health Promotion Programmes	Have you noticed any SHORT TERM differences or changes in your child's health behaviours as a result of this programme(s)?	1=Yes, 0=No
	Have you noticed any LONG TERM differences or changes in your child's health behaviours as a result of this programme(s)?	
Parents' Own Health Behaviour Section 6.4.3, p. 111 Table 6.6. Parents' Own Health Behaviours and Knowledge	Do you think YOUR diet is balanced? Please explain why/why not.	1=Yes, 0=No
	Do you think YOU exercise enough? Please explain why/why not.	
	I think my overall knowledge of healthy eating and exercise is:	5=Excellent, 1=Poor
Children's Dietary & Physical Activity Behaviours Section 6.4.4, p. 114 Table 6.7. Children's Dietary and Exercise Behaviours	I ensure that my children have a balanced diet.	1=Strongly Disagree, 5=Strongly Agree
	I regularly discuss the value of a balanced diet and exercise with my children.	
	I am responsible for the food my children eat at school.	
	I limit the amount of high fat foods my children eat.	
	I limit the amount of high sugar foods my children eat.	
	I encourage my children to participate in sports outside of school.	
General Perceptions of Food and Nutrition Section 6.4.5, p. 116 Table 6.8. General Perceptions of Food and Nutrition	Some people cannot afford to eat healthy food.	1=Strongly Disagree, 5=Strongly Agree
	Junk food tastes better than healthy food.	
	Some people do not have time to prepare healthy food.	
General Perceptions of Physical Activity Section 6.4.6, p.118 Table 6.9. General Perceptions of Physical Activity	In some neighbourhoods it is not safe for children to play outside unsupervised.	1=Strongly Disagree, 5=Strongly Agree
	There are not enough sports/ exercise facilities for children in my neighbourhood.	
	Some people cannot afford the costs of their children participating in sports outside of school hours.	
	People with busy schedules don't have time to exercise.	
	Exercise is boring.	
Other Nutrition and Physical Activity Related Issues Section 6.4.7, p. 120 Table 6.10. Perceptions of Other Nutrition and Physical Activity Related Issues	People worry too much about healthy eating and exercising.	1=Strongly Disagree, 5=Strongly Agree
	The media presents conflicting information about healthy eating and exercise.	
	Information about healthy eating and exercise is difficult to understand.	
	It is the parents' responsibility to educate their children about healthy eating and exercise.	
Government Involvement in Health Promotion Programmes Section 6.4.8, p. 122 Table 6.11. Government Involvement in Health Promotion Programmes	Governments should play a more active role in healthy eating and exercise programmes for children.	1=Strongly Disagree, 5=Strongly Agree
	Governments should provide more funding for healthy eating and exercise programmes in schools.	

6.4.1. Communication from Schools to Parents

Parents were asked to comment on any information they receive from their school about health promotions. Across the schools, common information sources included newsletters, other printed materials (information sheets, notices, pamphlets, brochures) and school websites. Parents indicated school newsletters and websites provide regular updates on, for instance, topics currently being studied in the classroom, what foods are being sold through the school canteen and new food policies, and upcoming events (such as sports days). School E, as a HPS, also produces a health newsletter in addition to the school newsletter. Printed material from schools may be topic specific such as healthy eating pamphlets or brochures regarding particular sports events (e.g. Jump Rope for Heart). Additionally, parents indicated they obtain information through parent evenings, by visiting the school office, or contacting their child‘s teacher directly. These findings are summarised with supporting quotes in Table 6.3.

Accounts from school staff and parents are largely consistent with respect to communication regarding health promotions. As discussed in the previous chapter, school staff indicated they typically communicate with parents to inform them about current programmes, and responses from parents suggest they view the information in the same manner. The extent to which parents value and use the information they receive from schools is, however, uncertain. Responses from parents at low and mid decile schools suggests that the information may be useful in providing hints for healthy lunches or providing parents opportunities to participate in school-based activities. Alternatively, high decile school parents appear to take less notice of the information, perhaps because they feel they do not need it, as the quote in Table 6.3 suggests. This quote also indicates some parents feel schools may be taking certain health promotion issues too far.

Overall, while some parents are promoting positive practices to their children, either guided by school-based promotions, or of their own accord, there are potentially others who do not read, or disregard, the information sent to them, who would, in fact, benefit from that information. Additionally, although there are parents who claim they do not need information provided by the school, there are others who indicated they do, and would like further information on certain topics. Responses covered a wide range of topics such as government recommended dietary guidelines, physical activity guidelines, healthy weight ranges for children, vitamin supplements, food groups, healthy food and exercise options, and more information on the health programmes operating in their schools. Parents suggested information could be disseminated by post or through schools in the form of brochures, pamphlets and newsletters. More practical approaches included information evenings or community-based programmes that could be run through the school.

Table 6.3. Communication from Schools to Parents

If there is a health programme(s) operating in your school, did you receive any information about the programme(s)?	
Finding	Supporting Quotes
Schools communicate with parents primarily through newsletters, printed material and school websites. Communications about nutrition and physical activity are typically concerned with providing updates on topics of study, tuckshop matters, and upcoming events.	*"We have a health team, consisting of parents/ caregivers and health professionals. The health team meets once a month and produces a monthly newsletter for all families."* (Asian parent, School E)
	"Notes home about Jump Rope, Life Education Trust visits re: Nutrition and health/ new healthy choices introduced last year on school tuck shop menu." (NZ European parent, School C)
	"We have been informed not to send sweets to school." (NZ European parent, School B)
Low and mid decile parents may be using information delivered through school-based promotions to develop healthy behaviours for themselves and their children. High decile parents appear to take less notice of the information, perhaps because they feel they already promote positive practices.	*"Newsletter sent home to encourage healthy eating - 5+ a day. School food programme tells parents and kids what makes a good lunch and drink (water). Jump Jam - Invitation to get in and do Jump Jam with the kids when Brett Fairweather came to the school. Heaps of fun."* (NZ Māori parent, School F)
	"To be honest I may have but we have always encouraged our children to eat well and involve themselves in sport. So I don't take too much notice of school based info. They can be a bit anal over issues such as they found too many yoghurt pots on the ground so were going to ban yoghurt! Such a great food for kids." (NZ European parent, School B)

6.4.2. Changes in Children's Health Behaviour

Parents were asked if they had noticed any short or long term changes in their children's health behaviours as a result of health promotion programmes in their school. The results of these questions are presented in Table 6.4 (p.109). Parents were also asked to explain the changes, if any, they had noticed. These findings, along with supporting quotes are summarised in Table 6.5 (p.110). There was a significant (at the 5% level) negative relationship between parents of children attending a HPS and short term changes in children's health behaviours. This result is somewhat surprising as we might expect more changes in children who are attending schools which emphasise health promotion. Some parents did, however, indicate health promotion at school should complement healthy practices established at home. If this is the case and parents and schools are promoting the same ideas and healthy behaviours, then perhaps healthy attitudes and behaviours are reinforced by school promotions rather than changed by them. Indeed, parents indicated reinforcement of healthy behaviours at school was beneficial to home-based efforts, as illustrated by quotes in Table 6.5.

A significant (at the 1% level) positive relationship was found between parents being of Māori and Pacific Islander ethnicity and both short term and long term changes in children‘s health behaviours as a result of school-based programmes. As the New Zealand government‘s ‗Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau‘ (HEHA) strategy identifies Māori and Pacific peoples as priority targets for obesity-reducing efforts, this result provides evidence that school-based health promotions are achieving positive outcomes for these communities. As quotes in Table 6.5 show, for mid and low decile Māori and Pacific Island families, school-based programmes are educational for both children and the wider community. Parents identified not only positive changes in their children‘s attitudes and behaviours, but also indicated school-based initiatives led to changes in behaviour for the whole family. Although mid and high decile, predominately NZ European families, appeared to consider health promotions as primarily reinforcing existing positive practices at home, written responses from these parents (shown in Table 6.5) also indicate children‘s exposure to specific programmes made a positive impact.

At all schools, parents‘ written responses indicated health promotions achieved positive short and long term changes in their children‘s health behaviours. In terms of eating, parents reported children are: more aware of healthy eating and the benefits of doing so, engaging in discussion and asking questions about healthy foods, wanting to try new foods (e.g. fruit and vegetables), eating a wider range of foods, becoming more selective with takeaway and fast food options and drinking water instead of ‗fizzy‘ drinks. Likewise, parents recognised positive changes in attitudes towards exercise and exercise behaviours. Children are, for example: fitter, keen to exercise and understand the importance of doing so, choosing outdoor activities over indoor ones (e.g. bike riding instead of television viewing), and becoming comfortable with their own physical motivation and coordination. Additionally, parents noticed changes to learning as a result of exercise and healthy eating. Children are keen to learn, able to concentrate better, and are less frustrated or tired. Parents noted both improvement in children‘s learning and increased understanding of the relationship between food, exercise and the body for learning. Finally, although healthy eating and physical activity are beneficial to children, parents reported maintaining these practices can be difficult.

Table 6.4. Changes Resulting from Health Promotion Programmes

	Have you noticed any SHORT TERM differences or changes in your child's health behaviours as a result of this programme(s)? (1=Yes, 0=No)	**Have you noticed any LONG TERM differences or changes in your child's health behaviours as a result of this programme(s)? (1=Yes, 0=No)**
Gender	-0.774 (-1.59)	-0.371 (-0.79)
Birth Year	-0.133 (-0.86)	0.169 (-1.06)
Number of Kids	0.037 (0.35)	0.026 (0.25)
Decile	0.015 (0.37)	-0.024 (-0.60)
HPS	**-0.475**** (-2.05)	0.141 (0.64)
NZ European Ethnicity (dummy)	0.447 (1.14)	0.710 (1.61)
Asian Ethnicity (dummy)	-	0.402 (0.56)
Māori & Pacific Islander Ethnicity (dummy)	**1.656*** (3.28)	**1.502*** (3.11)
Constant	-0.209 (-0.19)	-2.256 (-1.98)
Wald Statistic	19.83 (0.006)	17.40 (0.026)
Number of Observations	172	174
Estimation Technique	Probit	Probit

*significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

Table 6.5. Short and Long Term Changes Resulting from Health Promotion Programmes

Have you noticed any SHORT TERM/ LONG TERM differences or changes in your child's health behaviours as a result of this programme(s)?	
Finding	Supporting Quotes
School-based health promotion complements healthy practices established at home.	*"They have a very good diet and physical activity programme already - this just re-enforces what we do already at home."* (NZ European parent, School B)
	"[We] support healthy eating and exercise from home so school has a minimal effect. School does not go against what we support." (NZ European parent, School C)
Parents acknowledge the benefits of having healthy behaviours reinforced at school.	*"My children were more aware and it was good to have the messages about junk food/healthy food from home reinforced by school. They took more notice when someone other than mum was saying the same thing."* (NZ European parent, School C)
Parents of Māori and Pacific Islander ethnicities have noticed changes in their children's health behaviours as a result of school-based promotions and some initiatives have led to changes in behaviour for the whole family.	*"I have noticed that my child is aware of healthy eating and exercise. As a result of this programme [she] has now joined an out of school programme to keep herself fit and healthy."* (NZ Māori parent, School F)
	"Yes, my children were never interested in playing outdoors, but yes, now they really love playing outdoors and participating in sports and they love eating fruit and vegetables." (Pacific Islander parent, School D)
	"My whole family have changed their diet. We are eating more fresh fruit and vegetables. We do a lot of walking – walking more instead of using [the] car. We all drink water and the children have a treat once a month." (Pacific Islander parent, School E)
Exposure to particular health promotion programmes has directly resulted in positive changes for children.	*"Jump Jam - children love to move to music when they hear a song they know. Jump Rope for Heart - sudden interest in skipping again."* (NZ European Parent, School B)
	"Walking School Bus - children are excited about this programme and want to participate." (NZ European parent, School A)
Positive nutrition and physical activity practices can be difficult to maintain.	*"Our children don't consistently practise these good habits but when they do they sleep better, are far more alert and a lot happier."* (NZ Māori parent, School C)
	"Short term awareness of healthy eating or physical activity wears off when a "treat" is on offer." (NZ European parent, School A)

6.4.3. Parents' Own Health Behaviour

Parents were asked two questions about their own health behaviour: 1) whether they perceive their diet is balanced, or not, and 2) whether they perceive they exercise enough, or not. The results of these questions are presented in Table 6.6 (p. 113). Table 6.6 shows a significant (at the 1% level) relationship between parents of NZ European ethnicity and having a balanced diet and exercising enough. This result suggests NZ European parents consider their nutrition and physical activity practices to be positive. There was also a significant (at the 5% level) negative relationship between decile and exercising. As decile increases, parents perceive they do not exercise enough. This result is interesting as we might expect high decile families to be more affluent than low decile families, better educated on the importance of exercise, and to have better access to recreational facilities. One possible explanation is those of higher socio-economic status are more aware of the importance of physical activity and recommended guidelines for activity and, therefore, recognise their own activity levels are inadequate. By comparison, those who are less educated may not realise they are physically inactive. A further consideration is the somewhat conflicting results here; high decile schools have a high proportion of NZ European parents, yet, there is a positive relationship between parents of NZ European ethnicity and exercising enough, but a negative relationship between decile and exercising. So, it could be that NZ European parents of low decile schools believe they are exercising enough (but they may not be), while NZ European parents of high decile schools are perhaps more aware that they are not exercising enough. While there is a significant correlation between ethnicity and socio-economic status (as indicated by decile), one is not a proxy for the other. Perhaps then, it is high decile parents of ethnicities other than NZ European who perceive they do not exercise enough.

Space was also provided in the questionnaire for parents to explain their diet and exercise behaviours. Parents identified fruit and vegetables, lean meats, fish and dairy products as important elements of a balanced diet, with treat foods (such as sweets) in moderation. The food pyramid was cited by some as a resource for guiding dietary behaviour. Although many parents responded ‗yes' to whether their diet was balanced or not, they explained their diet was ‗generally' balanced or they ate well ‗most of the time'. Not eating enough fruit, vegetables and fish, or eating too many takeaways were common responses by those who felt their diet was not balanced. Some parents reported they tried to eat well, but often did not have time to prepare healthy food, or could not afford it. Others felt they did not have good nutrition knowledge or were receiving mixed messages about food in the media. Some parents reported they focus their efforts on ensuring their children perform positive health behaviours, such as eating breakfast, but often do not themselves. Parents' responses regarding exercise behaviour varied greatly. There was no clear, consistent perception of what kind of activities could be considered ‗exercise' or how much would constitute ‗enough'. Some parents, for instance, felt walking with their child to school several days a week was a sufficient

amount of exercise. Other parents, however, who were involved in a greater variety of sports and exercise activities more often, still felt they should exercise more. Many stated lack of time, interest, or motivation as reasons for not exercising regularly.

Parents were asked to rate their overall knowledge of healthy eating and exercise. The results of this question are also presented in Table 6.6. Table 6.6 shows a significant (at the 5% level) relationship between decile and knowledge of healthy eating and exercise, suggesting as decile increases, knowledge increases. This result is unsurprising; parents in higher socio-economic groups are likely to have higher education levels and, therefore, we might expect them to have greater knowledge and understanding of health concepts than lower decile parents. Some parents, however, perceive their overall knowledge of health behaviours to be greater than the sum of their knowledge of government recommended dietary and exercise guidelines. There were parents who, for instance, perceived their knowledge of both dietary and exercise guidelines to be _fair' or _good', but they perceived their overall knowledge of healthy eating and exercise to be _excellent'.

Table 6.6. Parents' Own Health Behaviours and Knowledge

	Do you think YOUR diet is balanced? **Please explain why/why not.** **(1=Yes, 0=No)**	**Do you think YOU exercise enough?** **Please explain why/why not.** **(1=Yes, 0=No)**	**I think my overall knowledge of healthy eating and exercise is:** **(5=Excellent, 1=Poor)**
Gender	0.091 (0.22)	0.059 (0.18)	0.011 (0.03)
Birth Year	-0.156 (-0.88)	0.150 (1.11)	-0.122 (-0.88)
Number of Kids	-0.085 (-0.96)	-0.072 (-0.81)	0.005 (0.06)
Decile	-0.011 (-0.29)	**-0.072** (-2.05)	**0.069** (2.01)
HPS	0.265 (1.27)	0.415 (0.22)	0.119 (0.64)
NZ European Ethnicity (dummy)	**0.837** (2.61)	**0.970** (3.24)	-0.124 (-0.44)
Asian Ethnicity (dummy)	-0.193 (-0.34)	0.406 (0.72)	-0.340 (-0.58)
Māori & Pacific Islander Ethnicity (dummy)	-0.378 (-0.94)	0.145 (0.35)	0.521 (1.33)
Constant	1.407 (1.17)	-0.963 (-1.03)	-
Wald Statistic	29.25 (0.000)	13.46 (0.097)	7.12 (0.52)
Number of Observations	211	208	181
Estimation Technique	Probit	Probit	Ordered Probit

*significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

6.4.4. Children's Dietary & Physical Activity Behaviours

Parents were asked to indicate their level of agreement with a range of statements about their children's dietary and exercise behaviours. The results are presented in Table 6.7 (p. 115). The impact (significant at the 10% level) of birth year on discussion of nutrition and physical activity suggests older parents regularly discuss the value of a balanced diet and exercise with their children. They also encourage their children to participate in sports outside of school (significant at the 10% level). There is no clear indication why older parents might discuss health topics with their children more than younger parents. Anecdotal evidence from older parents suggests, however, their childhoods involved less convenience foods and more active lifestyles without television, computing and gaming technologies, which might explain their focus on healthy eating and activity for their own children. The relationship between number of children and participation in sports outside school was also significant (at the 10% level). As the number of children increases, encouragement to participate in sports outside of school decreases. Comments from parents indicate, particularly for larger families, involving all children in organised sports can be costly and difficult to manage. These responses are consistent with teachers' perceptions of time and money as the two major factors impacting upon children's involvement in sport.

Decile was a significant factor across a number of the questions asked. As decile increases, so does agreement among parents that they ensure their children have a balanced diet and they regularly discuss diet and exercise with them (significant at the 10% level and 5% levels, respectively). They also limit the amount of high fat foods their children eat and perceive themselves responsible for the foods their children eat at school (significant at the 1% and 5% levels respectively). These results are as we might expect for high decile families, where high education levels and affluence are likely to enable parents to discuss health topics with their children and provide them with a variety of healthy foods. Parents of Asian ethnicity strongly agreed with limiting high sugar foods and ensuring their children have a balanced diet (significant at the 1% level). Traditional Asian diets are often considered healthier than Western diets (Pingali, 2007), so perhaps Asian families are more concerned with maintaining a balanced diet and limiting intake of high sugar foods. Parents of children at HPS disagreed that they discuss the value of healthy eating and exercise with their children at home. This result is somewhat surprising as we might expect parents whose children attend a HPS, where health is an integral component of school activities, to talk about health topics with their children. Alternatively, perhaps parents promote positive health practices by establishing the home as an environment which supports those behaviours, and, thus, promote health by ‗doing' rather than ‗telling'. Conversely, given the strong focus on health at school, perhaps parents perceive less need to discuss health topics at home. This is consistent with anecdotal evidence from teachers and principals that some parents do not take an active role in their children's health education because the topics are covered in the school curriculum.

Table 6.7. Children's Dietary and Exercise Behaviours

	I ensure that my children have a balanced diet. (1=Strongly Disagree, 5=Strongly Agree)	**I regularly discuss the value of a balanced diet and exercise with my children. (1=Strongly Disagree, 5=Strongly Agree)**	**I am responsible for the food my children eat at school. (1=Strongly Disagree, 5=Strongly Agree)**	**I limit the amount of high fat foods my children eat. (1=Strongly Disagree, 5=Strongly Agree)**	**I limit the amount of high sugar foods my children eat. (1=Strongly Disagree, 5=Strongly Agree)**	**I encourage my children to participate in sports outside of school. (1=Strongly Disagree, 5=Strongly Agree)**
Gender	0.019 (0.05)	-0.268 (-0.87)	-0.235 (-0.69)	-0.314 (-0.93)	-0.473 (-1.50)	-0.271 (-1.00)
Birth Year	0.037 (0.26)	**-0.232*** (-1.85)	0.226 (1.49)	-0.172 (-1.35)	-0.046 (-0.41)	**-0.267*** (-1.86)
Number of Kids	0.035 (0.48)	-0.048 (-0.66)	0.048 (0.50)	-0.025 (-0.33)	-0.053 (-0.73)	**-0.161*** (-1.89)
Decile	**0.122***** (3.90)	**0.079**** (2.36)	**0.100**** (2.43)	**0.055*** (1.81)	0.044 (1.35)	0.047 (1.50)
HPS	-0.101 (-0.53)	**-0.289*** (-1.84)	0.059 (0.27)	-0.155 (-0.92)	-0.073 (-0.43)	0.232 (1.33)
NZ European Ethnicity (dummy)	0.272 (1.02)	0.227 (0.80)	-0.457 (-1.04)	0.267 (1.02)	0.190 (0.74)	-0.153 (-0.55)
Asian Ethnicity (dummy)	**1.527**** (2.46)	0.060 (0.10)	-0.592 (-0.83)	0.594 (0.96)	**8.659***** (31.95)	0.652 (0.95)
Māori & Pacific Islander Ethnicity (dummy)	0.225 (0.62)	0.349 (0.97)	-0.151 (-0.34)	0.411 (1.17)	0.135 (0.39)	0.410 (1.12)
Wald Statistic	25.49 (0.001)	23.66 (0.003)	13.75 (0.089)	13.58 (0.094)	4669.98 (0.000)	14.07 (0.080)
Number of Observations	216	214	215	217	216	218
Estimation Technique	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit

*significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

6.4.5. General Perceptions of Food and Nutrition

Parents were asked to indicate their level of agreement with a range of statements about food and diet in general. The results are presented in Table 6.8 (p. 117). The negative impact (significant at the 10% level) of gender on the affordability of healthy foods suggests males believe people can afford healthy food. Perhaps men and women perceive affordability differently, so food prices which men consider affordable, women may not consider affordable. Alternatively, as women are the main grocery shoppers in New Zealand, their perceptions of affordability may be based on frequent shopping experience, whereas men who do not shop may have a less accurate perception of food costs.

There are also negative impacts (significant at the 5% level) on both decile and parents of NZ European ethnicity and the affordability of food. As decile increases, parents disagree that some people cannot afford healthy food. Again, we might expect this result, as parents with children at high decile schools typically represent families of a high socio-economic status. These more affluent families are likely able to provide their children with a variety of foods and healthier food choices. There is also a negative relationship (significant at the 1% level) between decile and the taste of junk food. As decile increases, parents disagree that junk food tastes better than healthy food. In terms of food preparation, there is a significant (at the 5% level) relationship between parents of Māori and Pacific Island ethnicity and the time needed to prepare food. Māori and Pacific Island parents agreed some people do not have time to prepare healthy food. This result is consistent with comments provided by some of the Māori and Pacific Island parents. One Tongan parent, for instance, explained as a single mother of four children, working in full-time employment, she often could not afford healthy food and there was little time for preparing and eating meals together.

Table 6.8. General Perceptions of Food and Nutrition

	Some people cannot afford to eat healthy food. (1=Strongly Disagree, 5=Strongly Agree)	**Junk food tastes better than healthy food. (1=Strongly Disagree, 5=Strongly Agree)**	**Some people do not have time to prepare healthy food. (1=Strongly Disagree, 5=Strongly Agree)**
Gender	**-0.514*** (-1.73)	-0.009 (-0.03)	-0.147 (-0.52)
Birth Year	0.161 (1.27)	0.031 (0.26)	0.116 (1.00)
Number of Kids	0.006 (0.08)	-0.027 (-0.37)	-0.053 (-0.74)
Decile	**-0.066**** (-2.34)	**-0.087***** (-3.12)	-0.027 (-0.94)
HPS	-0.028 (-0.17)	0.228 (1.45)	-0.107 (-0.69)
NZ European Ethnicity (dummy)	**-0.582**** (-2.36)	-0.186 (-0.78)	-0.227 (-1.02)
Asian Ethnicity (dummy)	-0.475 (-0.82)	-0.274 (-0.56)	-0.140 (-0.30)
Māori & Pacific Islander Ethnicity (dummy)	-0.026 (-0.07)	0.267 (0.78)	**0.645**** (2.09)
Wald Statistic	36.32 (0.000)	27.06 (0.001)	19.25 (0.014)
Number of Observations	215	213	214
Estimation Technique	Ordered Probit	Ordered Probit	Ordered Probit

*significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

6.4.6. General Perceptions of Physical Activity

Parents were asked to indicate their level of agreement with a range of statements about exercise in general. The results are presented in Table 6.9 (p. 119). Gender has a negative impact on safety in outdoor play (significant at the 1% level), the affordability of participation in sports (significant at the 5% level) and attitude toward exercise (significant at the 10% level). These results suggest males perceive it is safe for children to play outside unsupervised and the costs of extra-curricular sports can be affordable. The degree of involvement among men and women in supervising and supporting children's physical activities may be of relevance; while men feel it is safe for children to play outside unsupervised, it is perhaps women who are, in fact, responsible for the care of children most of the time. Similarly, gender perceptions regarding the affordability of extracurricular sports could be related to the degree of involvement men and women have in organising children's sporting activities (e.g. paying fees or purchasing team uniforms). Or again, it could be a perceptual difference with respect to what constitutes ‗affordable'. Males also disagreed that exercise is boring (significant at the 1% level). As involvement in sport and physical activity is historically male-dominated (Koivula, 1995), this result perhaps suggests that generally men are more interested in sport and exercise than women.

As decile increases, parents perceive it is safe for children to play outside and there are enough sports and exercise facilities in the neighbourhood (both significant at the 5% level). These results are supported by responses, largely from Māori and Pacific Island parents, living in lower decile communities, who perceive it is *not* safe for children in their neighbourhoods to play outside unsupervised. Perceptions of the safeness of outdoor play for children are likely a reflection of the communities in which lower decile families live. When walking or participating in physical activities within the community, crime, traffic, poor lighting, abandoned buildings and graffiti may have an impact on people's perceptions of safety (Caitlin, Simoes, & Brownson, 2003). There may also be fewer sports and recreation amenities in poorer communities. Additionally, if families live in the suburban areas near their child's school, then the characteristics of those areas may also explain parents' responses. School A, for instance, is located near several beaches and parks, providing outdoor spaces for children to play. School C, by comparison, is located on one of several busy, intersecting main streets in the area, meaning road safety is a concern for families residing nearby.

Table 6.9. General Perceptions of Physical Activity

	In some neighbourhoods it is not safe for children to play outside unsupervised. (1=Strongly Disagree, 5=Strongly Agree)	**There are not enough sports/ exercise facilities for children in my neighbourhood. (1=Strongly Disagree, 5=Strongly Agree)**	**Some people cannot afford the costs of their children participating in sports outside of school hours. (1=Strongly Disagree, 5=Strongly Agree)**	**People with busy schedules don't have time to exercise. (1=Strongly Disagree, 5=Strongly Agree)**	**Exercising is boring. (1=Strongly Disagree, 5=Strongly Agree)**
Gender	**-0.743***** (-2.70)	0.061 (0.25)	**-0.568**** (-2.12)	0.064 (0.21)	**-0.481*** (-1.76)
Birth Year	0.187 (1.49)	-0.122 (-0.96)	0.067 (0.51)	0.085 (0.66)	0.044 (0.37)
Number of Kids	0.047 (0.64)	0.053 (0.69)	0.037 (0.48)	0.108 (1.36)	-0.092 (-1.05)
Decile	**-0.055**** (-1.97)	**-0.050**** (-1.95)	0.007 (0.26)	0.024 (0.80)	-0.025 (-0.91)
HPS	0.094 (0.52)	-0.221 (-1.35)	-0.151 (-0.88)	-0.062 (-0.38)	0.010 (0.06)
NZ European Ethnicity (dummy)	-0.044 (-0.20)	-0.242 (-1.02)	-0.354 (-1.45)	**-0.616**** (-2.44)	-0.219 (-0.97)
Asian Ethnicity (dummy)	0.155 (0.32)	0.088 (0.24)	0.505 (0.95)	0.056 (0.10)	-0.040 (-0.08)
Māori & Pacific Islander Ethnicity (dummy)	0.228 (0.60)	0.485 (1.40)	-0.161 (-0.41)	0.248 (0.76)	-0.071 (-0.20)
Wald Statistic	22.04 (0.005)	20.43 (0.009)	10.51 (0.231)	23.96 (0.002)	7.24 (0.511)
Number of Observations	202	207	207	215	214
Estimation Technique	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit

*significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

6.4.7. Other Nutrition and Physical Activity Related Issues

Parents were asked to indicate their level of agreement with a range of statements about other diet and exercise issues such as the presentation of health topics in media, and the degree to which health information is understandable. These results are presented in Table 6.10 (p. 121). Decile rating has a significant (at the 10% level) impact on perceived difficulty in understanding health information. As decile increases, parents perceive information about healthy eating and exercise is *not* difficult to understand. As lower decile communities typically serve large proportions of children and students from minority ethnic groups and disadvantaged backgrounds, it is not surprising that there is a relationship (significant at the 5% level) between parents of Māori and Pacific Island ethnicity, and the extent to which information about health is confusing. Parents in lower decile communities are likely to have lower levels of education than those in high decile communities, which might explain why they perceive health information as confusing or hard to understand. Again, as Māori and Pacific peoples are priority targets for obesity-reducing efforts; this result suggests simpler health messages may be required to target these groups. There is also a positive relationship (significant at the 10% level) between parents of NZ European ethnicity, and worrying about health. Parents of NZ European ethnicity perceive people *do not* worry too much about healthy eating and exercise. This result, perhaps, suggests NZ European parents perceive people are sufficiently aware of, and engaged in positive eating and activity behaviours, or alternatively, perceive people ought to be more concerned about health issues.

Table 6.10. Perceptions of Other Nutrition and Physical Activity Related Issues

	People worry too much about healthy eating and exercising. (1=Strongly Disagree, 5=Strongly Agree)	**The media presents conflicting information about healthy eating and exercise. (1=Strongly Disagree, 5=Strongly Agree)**	**Information about healthy eating and exercise is difficult to understand. (1=Strongly Disagree, 5=Strongly Agree)**	**It is the parents' responsibility to educate their children about healthy eating and exercise. (1=Strongly Disagree, 5=Strongly Agree)**
Gender	0.235 (0.82)	0.474 (1.56)	0.454 (1.58)	**0.647**** (2.34)
Birth Year	-0.089 (-0.77)	0.004 (0.03)	0.122 (0.98)	0.079 (0.65)
Number of Kids	-0.053 (-0.71)	0.063 (0.75)	0.025 (0.33)	0.059 (0.82)
Decile	-0.017 (-0.63)	0.032 (1.18)	**-0.064**** (-2.32)	0.044 (1.59)
HPS	0.240 1.51	-0.015 (-0.09)	-0.011 (-0.07)	-0.167 (-0.99)
NZ European Ethnicity (dummy)	**-0.462*** (-1.78)	0.001 (0.00)	-0.059 (-0.26)	-0.094 (-0.39)
Asian Ethnicity (dummy)	0.029 (0.09)	0.313 (0.78)	-0.384 (-0.96)	0.320 (0.68)
Māori & Pacific Islander Ethnicity (dummy)	0.405 (1.23)	**0.830**** (2.26)	-0.004 (-0.01)	0.417 (1.25)
Wald Statistic	29.41 (0.000)	10.60 (0.226)	16.41 (0.037)	10.01 (0.264)
Number of Observations	210	206	214	211
Estimation Technique	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit

*significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

6.4.8. Government Involvement in Health Promotion Programmes

Parents were asked to indicate their level of agreement with two statements about government involvement in healthy eating and exercise programmes. The results are presented in Table 6.11 (p. 123). There is a negative relationship (significant at the 1% level) between parents of NZ European ethnicity and the government's involvement in healthy eating and exercise programmes for children. Likewise, being of NZ European ethnicity has a negative impact (significant at the 10% level) on perceptions of government funding of healthy eating and exercise programmes for children. Parents of NZ European ethnicity disagreed the government should be more actively involved or provide more funding for these programmes. Gender and decile also have a negative impact (significant at the 5% and 10% levels respectively) on perceptions of government funding of healthy eating and exercise programmes for children. Males, and as decile increases, parents, disagree the government should provide more funding for health programmes.

There are a number of potential explanations for parents' perceptions of government involvement in health promotion, particularly with respect to decile and ethnicity. NZ European parents and those representing high decile communities are, perhaps, less concerned about improving nutrition and physical activity through school-based health promotions as they feel current programmes are sufficient, or because they feel their own health promotion efforts are adequate (see, for example, the first set of quotes in Table 6.5, p.110). Alternatively, parents' responses may be in acknowledgement of the government's efforts to address nutrition, physical activity and obesity issues. For instance, the New Zealand Labour coalition government allocated a further $76.1 million in the 2006 budget to address obesity (Hodgson, 2006). Parents may, therefore, be satisfied with government's increased allocation of funding and efforts to address health issues through schools. Overall, parent's opinions on the matter vary. As highlighted by the first comment in Table 6.12 (p. 124) some parents are less concerned with the allocation of funding, and more concerned with how that funding will be spent. Other parents are concerned that too much effort is being placed on addressing health concerns at school, as shown in the second comment in the table.

Table 6.11. Government Involvement in Health Promotion Programmes

	Governments should play a more active role in healthy eating and exercise programmes for children. **(1=Strongly Disagree, 5=Strongly Agree)**	**Governments should provide more funding for healthy eating and exercise programmes in schools.** **(1=Strongly Disagree, 5=Strongly Agree)**
Gender	-0.275 (-0.95)	**-0.629**** (-2.01)
Birth Year	0.001 (0.01)	0.171 (1.34)
Number of Kids	0.003 (0.05)	-0.119 (-1.62)
Decile	-0.024 (-0.85)	**-0.062*** (-1.94)
HPS	0.110 (0.67)	0.206 (1.26)
NZ European Ethnicity (dummy)	**-0.474***** (-1.91)	**-0.463*** (-1.80)
Asian Ethnicity (dummy)	-0.049 (-0.13)	0.065 (0.12)
Māori & Pacific Islander Ethnicity (dummy)	0.185 0.46	-0.126 (-0.32)
Wald Statistic	12.84 (0.118)	27.22 (0.001)
Number of Observations	212	212
Estimation Technique	Ordered Probit	Ordered Probit
*significant at the 10% level ** significant at the 5% level *** significant at the 1% level		

Table 6.12. Government and Schools Involvement in Health Promotion Programmes

Finding	Supporting Comments
Some parents are concerned with how government money will be spent on dealing with the obesity problem, while others feel too much effort is being placed on addressing health concerns at school.	*"This year's budget! How many million for health and obesity? How is it to be spent? Not on surveys? Targeting the brown population?!!* (NZ Māori parent, School F)
	"I feel that eating education should not be the responsibility of schools. We as parents are responsible for teaching our children in this area. Schools are there to focus on maths, reading, writing etc. I would be highly offended if a teacher told me my children were not eating right. Valuable teaching time should not be wasted on this subject." (NZ European parent, School C)

6.5. Summary

The results of the parent survey show parents' perceptions of nutrition, physical activity and obesity-related issues are significantly related to demographic factors, such as gender, age, socio-economic status and ethnicity. A summary of all results is presented in Table 6.13 (p. 125). The socio-economic and ethnic factors are of particular importance as the New Zealand government's public health strategy, HEHA, identifies Māori and Pacific peoples and those in lower socio-economic groups as being priority targets for obesity-reducing efforts.

As the results presented in this chapter showed, priority groups have benefited from school-based nutrition and physical activity health promotions. Parents of Māori and Pacific Island ethnicities reported positive long and short term changes in their children's health attitudes and behaviours and, in some cases, changed their own behaviours as a result of school-based promotions. Māori and Pacific Islander parents, and those in lower socio-economic groups, however, perceive difficulty in affording healthy food and finding time to prepare healthy meals. The results also show Māori and Pacific Islander parents find health information presented in the media confusing. Additionally, these priority groups perceive there are not enough sports or exercise facilities for children in their neighbourhood, and that it is not safe for children to play outside unsupervised. Overall, results indicate simple health messages, which could be delivered through nutrition and physical activity social marketing campaigns, are needed to assist parents, particularly Māori and Pacific peoples and those in lower socio-economic groups, to engage children in healthy eating and activity behaviours.

Table 6.13. Summary of Significant Survey Results

***DECILE (SOCIO-ECONOMIC STATUS)**
As decile increases, parents:
Overall knowledge of healthy eating and exercise increases
Perceive they do not exercise enough
Ensure their children have a balanced diet
Regularly discuss the value of a balanced diet and exercise with children
Are responsible for the food their children eat at school
Limit the amount of high fat foods their children eat
High decile parents believe:
People can afford healthy food
Junk food does not taste better than healthy food
It is safe for children to play outside unsupervised
There are enough sports/exercise facilities for children in their neighbourhood
Information about healthy eating and exercise is not difficult to understand
Governments should not provide more funding for healthy eating and exercise programmes in schools
***GENDER**
Males believe:
People can afford healthy food
It is safe for children to play outside unsupervised
Parents can afford the costs of their children participating in sports outside of school
Exercise is not boring
It is the parents' responsibility to educate their children about healthy eating and exercise
Governments should not provide more funding for healthy eating and exercise programmes in schools
***ETHNICITY**
Europeans believe:
Their diets are balanced and they exercise enough
People can afford healthy food
People with busy schedules do have time to exercise
People do not worry too much about healthy eating and exercising
Governments should not play a more active role in healthy eating and exercise programmes for children
Governments should not provide more funding for healthy eating and exercise programmes in schools
Māori & Pacific Islanders:
Noticed both short term and long term differences or changes in their child's health behaviours as a result of school-based programmes
Believe some people do not have time to prepare healthy food
Believe the media presents conflicting information about healthy eating and exercise
Asians:
Ensure their children have a balanced diet
Limit the amount of high sugar foods their children eat
***AGE**
Younger Parents:
Rate their overall knowledge of healthy eating and exercise highly
Older Parents:
Regularly discuss the value of a balanced diet and exercise with their children
Encourage their children to participate in sports outside of school
***NO. OF KIDS**
As family size increases, parents:
Do not encourage their children to participate in sports outside of school
***HEALTH PROMOTING SCHOOL**
Parents whose children attend a HPS:
Did not notice any short term differences or changes in their child's health behaviours as a result of school-based programmes
Do not regularly discuss the value of a balanced diet and exercise with children

6.6. Limitations

The results presented in this chapter are based on a small scale survey of parents‘ self-reports of their own, and their children‘s knowledge, attitudes and behaviours. The small sample size, with a large representation of high decile parents, is a potential limitation of the survey. Response rates were lower for the mid and low decile schools, possibly because the non-native English speakers and those with low literacy levels in low decile communities found the questionnaire difficult to understand. A less complex design may have prompted low decile parents to complete the questionnaire, but it was important to include as many questions as necessary to collect the data needed to meet the study‘s objectives. It was also important to distribute the same questionnaire to all parents in order for the data to be comparable across the schools. Additionally, no direct incentives were offered to parents, as is often the case to encourage involvement in many commercial market research endeavours (although parents were informed a donation would be offered to their school). As access to parents could only be achieved through the schools, I had to rely on the principals to promote involvement in the survey.

The questionnaire required parents to self-report their own and their children‘s health knowledge, attitudes and behaviours. As questions covered a variety of diet and exercise practices, social desirability response bias is likely. In order to minimise this bias, the covering letter for the questionnaire assured parents anonymity and confidentiality. More importantly, the covering letter was issued by each school principal, allowing them to encourage involvement in the survey in such a way as to minimise parents‘ potential concerns regarding responses. Likewise, the survey was promoted as a component of doctoral research and, therefore, an academic endeavour, to reduce any concerns parents might have had in reporting their health behaviours. Indeed, parents appeared to respond honestly, as reflected in the example responses shown in Table 6.14 (p. 127). Although these comments suggest parents answered questions truthfully, it would be interesting to examine parents‘ and children‘s actual health behaviours. Food diaries or other methods could be used in future research to examine food and exercise patterns in detail.

Table 6.14. Examples of Parents 'Honest' Responses

Question	Response
Do you think YOUR diet is balanced? Why/ why not?	*"No, because I believe, I'm a smoker; I'd rather have a smoke instead of food."* (NZ Māori parent, School D)
Do you think YOU exercise enough? Why/ why not?	*"My exercise is very sporadic. Why? All the excuses under the sun."* (Parent, multiple ethnicities, School D)
Please describe your children's attitudes towards a balanced diet.	*"Everything tastes awful unless it is high in fat or sugar."* (NZ Māori parent, School F)
Please describe your children's attitudes towards exercise.	*"[My] son is resistant unless accompanied – [he] would prefer to sit in front of a screen if given the chance."* (NZ European parent, School B)

CHAPTER SEVEN
COMMUNICATION THEMES OF SCHOOL-BASED HEALTH PROMOTIONS

7.1. Chapter Overview

This chapter, in conjunction with Chapter Eight, presents findings from school staff interviews, the parent survey and children's focus groups to illustrate key themes identified in the data. Data were analysed using a blended models framework combining Integrated Marketing Communications (IMC) principles (Chitty et al., 2005) and the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein et al., 2003). IMC principles of communication include profiling the customer or prospect, using any form of relevant contact and consistent messages, building relationships, and affecting behaviour (Chitty et al., 2005). The IM posits performance of a given behaviour is a function of whether an individual has a strong intention to perform the behaviour, the necessary skills and abilities to do so, and whether there are environmental constraints preventing performance of the behaviour (Fishbein, 2000; Fishbein et al., 2003). As discussed in Chapter Five, the blended framework was used to explore communication processes within school-based health promotions, including behavioural outcomes of those promotions. A challenge of using the framework was discovering it did not fit the case data. A revised (*a posteriori*) model (Chapter Five, section 5.8, Summary and Revised Conceptual Framework, p.96) was thus developed to illustrate communication processes as they occurred in the school cases.

Data analysis using the conceptual framework did, however, produce insights regarding implementation of school-based health promotions. These emerged as four themes. First, it was established that government policy and community priorities impact upon which health messages are promoted and why (Theme A). Second, it was found stakeholder roles and relationships impact upon when and where health is promoted and by whom (Theme B). Third, the extent to which health is integrated into school life highlighted the importance of how health is promoted (Theme C). Finally, it was discovered that communication processes and related behaviours, which take place within different environmental contexts, are influenced by communication noise, a person's skills and abilities, and environmental conditions (Theme D).

In this chapter, the discussion focuses on Themes A, B and C. Each theme is illustrated with case evidence and linked to literature. Implications for theory, practice and future research are also included. The chapter concludes with a summary of the discussion leading into the presentation of Theme D, Environmental Contexts, in Chapter Eight.

7.2. Theme A: The Juxtaposition of Government Policy and Community Priorities

To determine the impact of communication processes on the implementation of school-based health promotions, stakeholder perceptions and expectations of promotions were analysed. Responses from principals and teachers in the case schools indicated two key factors underpin their health promotions. It was found that *government policy*, through requirements of the curriculum, broadly determines what health topics are promoted. Second, it was also found that schools select and apply curriculum topics based on their perceived *priorities* for their school community (i.e. the topics reflect community needs). The difference between the two factors is that the national curriculum is a framework which must be applied, whereas community priorities are the key issues driving how individual schools interpret and implement the curriculum. The juxtaposition of government policy and community priorities forms communication Theme A, and is discussed in the following sections.

7.2.1. Government Policy

A major impact on communication processes within school-based health promotions is government policy manifested through the requirements of the New Zealand Curriculum Framework. This is because the framework represents the official policy for teaching, learning, and assessment in New Zealand schools. It could be argued that curriculum is a given in the education system and unlikely to change significantly with new governments. Nutrition and physical activity, however, have received particular attention in the past five years as health issues which can be addressed in the school environment. Government-led actions include the launch of the ‗Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau' (HEHA) strategy (Ministry of Health, 2003a, 2003b, 2004b), which encourages schools to implement healthy eating and activity programmes. More recently the launch of *Mission-On* (New Zealand Government, 2006) has included curriculum changes designed to improve nutrition and increase physical activity among children. Government policy is, therefore, relevant to this thesis, because the research upon which the thesis is based specifically examined nutrition and physical activity health promotions, as opposed to other health promotions which may feature in the curriculum. Key findings regarding government policy, as summarised in Figure 7.1 (p. 130), pertain to the requirements of the health and physical education (PE) curriculum and the potential impacts of that curriculum upon schools and parents. The application of IMC principles to facilitate school-based health promotions is then considered based on these findings.

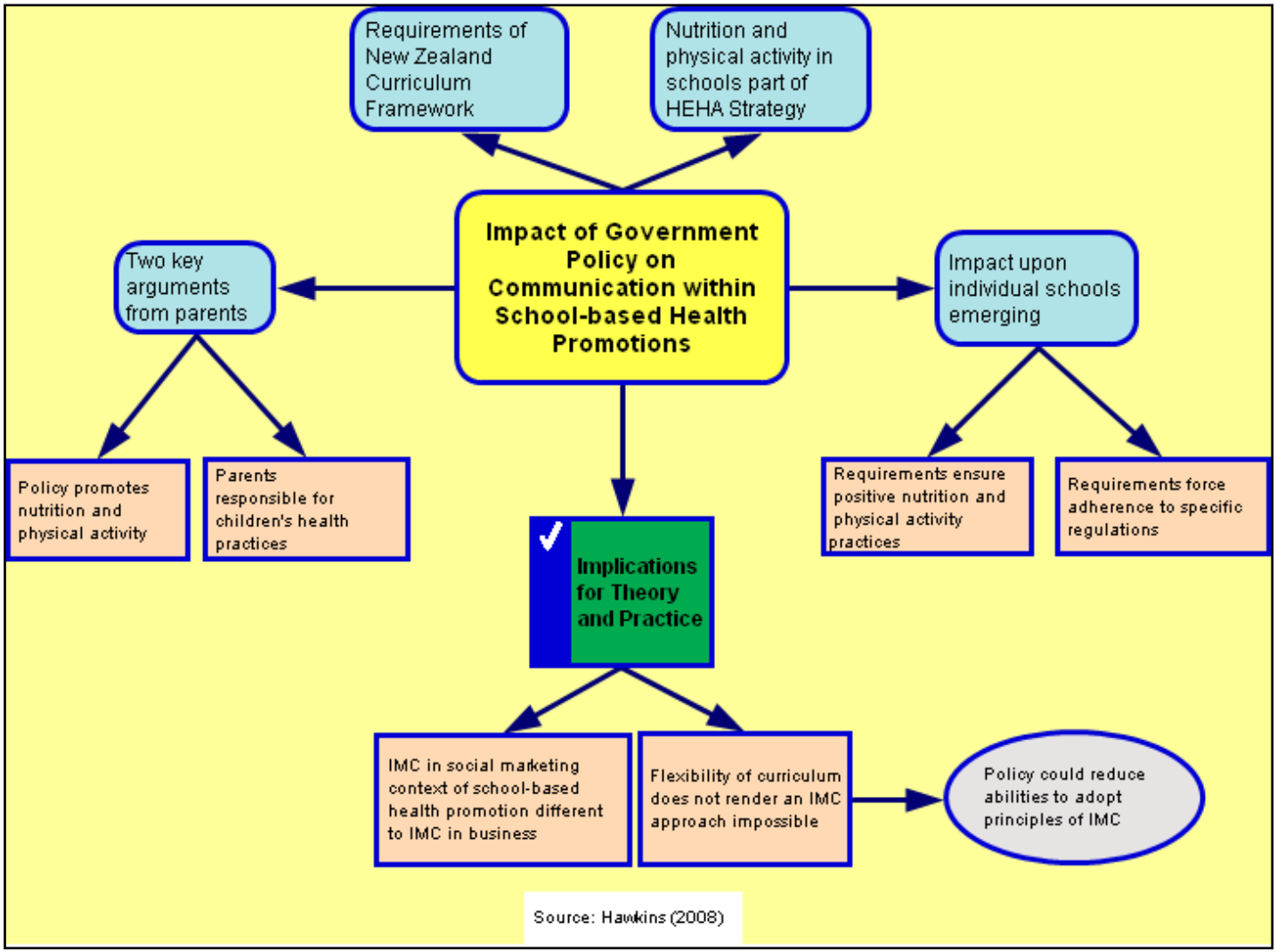


Figure 7.1. Key Findings Contributing to Theme A (1): Government Policy

Government policy impacts upon school-based health promotions as the Ministries of Education and Health have increased the emphasis on nutrition and physical activity in the curriculum. Effective since 2006, schools are required to give priority to regular quality physical activity that develops movement skills for all students, especially in years 1-6 (Ministry of Education, 2008a). As of June 2008, amendments to the National Administration Guidelines (NAGs) require the sale of only healthy food on school premises. The 2008 amendments form part of *Mission-On*, the interagency campaign designed to improve nutrition and increase physical activity among children, which is a priority for the current government. Although the curriculum includes a variety of health topics, the point is that nutrition and physical activity have received particular attention, such that schools must address those issues in a more prescribed manner than was previously required. In terms of communication processes within nutrition and physical activity promotions, the extent of ‗what' is promoted and ‗how', is, therefore, dictated by the curriculum to a greater extent than before curriculum changes were enacted.

More broadly, the increased emphasis on nutrition and physical activity in schools is a key component of the government's HEHA strategy (Ministry of Health, 2003a, 2003b, 2004b). The strategy was developed in acknowledgement of the increasing prevalence of obesity in New Zealand. It seeks to reduce obesity and overweight through workplace, school-based and community health promotion initiatives. Obesity and related issues are also topical in consumer media, including coverage relating to government-led obesity reduction efforts. As the following quote from Lisa, a teacher at School B, suggests, regardless of curriculum requirements, an awareness and appreciation of the importance of reducing obesity provides impetus for schools to make improving nutrition and increasing physical activity a priority.

> I probably really got involved with the food because of the government things, everyone's concerned about obesity and health, heart disease; those were our issues so it was a big push for looking at menus in school tuckshops.
> [Lisa, teacher, School B]

Although the aforementioned 2006 and 2008 curriculum amendments appear to dictate specific requirements for school-based health promotions, staff at School A indicated curriculum changes would have little effect beyond what schools were already achieving. The quotes below are representative of viewpoints expressed by staff regarding the physical activity requirements which were being proposed by the government at the time of interviewing.

> It depends what they legislate. You know, if they say, you will do an hour a week, it won't make any difference to us... we have two hours a week minimum.
> [Scott, principal, School A]

> I'm surprised they're bringing that in. A lot of schools do more than they were suggesting and I thought... well, maybe it's different in some areas, I don't know…
> [Lynn, teacher, School A]

The recent food and nutrition guidelines for schools (enacted June 2008) were not in place when this research was conducted (2005-2006) but could significantly impact upon schools as they are now obliged to sell only healthy food. Carter and Swinburn's (2004) study of the food environment in New Zealand primary schools found that typical tuckshop fare was not conducive to healthy food choices for children. This was reflected in the high sales of relatively unhealthy foods, with high-fat items (pies, sausage rolls) being the most available foods. Under the new food guidelines, most pies, confectionery, deep-fried foods, full-sugar fizzy drinks and high-fat pastry products are classified as 'occasional foods' which must be limited to only one occasion a term. Schools which sell such items may, therefore, need to revise their tuckshop offerings to ensure healthier options are available to meet the new food standards. Additionally, sale of 'occasional foods' may need to be restricted to certain days of the week or times of the term to reduce consumption of those foods among children.

More importantly, *how* the guidelines are to be implemented and monitored is yet another issue. Food and nutrition in schools is the joint responsibility of the Ministries of Health and Education, as part of *Mission-On*, yet, it is unclear how the two agencies collaborate. Health officials claim the food classification system is intended as a tool and schools are not required to comply with the new rules. The system itself, however, falls under the NAGs for schools, overseen by the Ministry of Education. Ultimately, the new guidelines are a well-intended approach to improving nutrition, but fraught with ambiguity in terms of implementation and evaluation procedures. Schools may be left to their own interpretations, therefore, reducing the likelihood of achieving success with the guidelines at a national level.

The potential impact of the new food and nutrition guidelines on the six schools in this study is unknown. (Data collection for the study was completed in 2006 and the proposed guidelines were launched in 2007, taking effect in 2008). The launch of the guidelines, however, prompted significant public response from parents, teachers and students across the country[53]. While some people were of the view the guidelines were a positive move towards improving nutrition, many were outraged about the government dictating food choices for children and families. Given the magnitude of responses, the public clearly feels strongly about policy changes to the school food environment.

As the results of the parent survey showed, New Zealand European parents mainly disagreed with the notion of increased government involvement in school-based health promotions (Chapter Six, section 6.4.8, p. 122). Likewise, New Zealand European parents and those representing high

[53] See, for example, The New Zealand Herald Your Views forums ("The Government's rules on food for school kids," 2007; "Should schools sell only healthy food?," 2007; "Your Views: More on healthy tuckshops," 2007; "Your Views: More on the tuckshop debate," 2007).

decile communities tended to disagree that the government should provide more funding for school-based health programmes (also section 6.4.8, p. 122). Analysis of the written responses from all parents who completed the survey across the schools identified two key arguments regarding increased government involvement in school-based health promotion. Those in favour applauded government actions to improve children's health. They recommended nutrition and physical activity policies be used to establish schools as environments which promote and support healthy behaviours. The following quote from a parent at School A illustrates this clearly.

> Compulsory sport and physical education (not just fitness) EVERY day. CLEAR COMPULSORY government guidelines e.g. 5 hours per week school time to curriculum... Government subsidies for sports fees. NO unhealthy food sold at school. [NZ European parent, School A]

Conversely, those parents opposed to government involvement in school-based health promotions indicated that it is the responsibility of parents (not that of the government or schools) to ensure children develop healthy eating and activity behaviours.

> I believe the government should be focusing on parents... Kids learning about healthy eating and exercise at school is great but parents are ultimately responsible for what their children eat.
> [NZ European parent, School B]

As with the public response to the school food guidelines, it is difficult to discern which viewpoint regarding government involvement in school-based health promotions has more support. Ultimately, we have learnt that improving nutrition and increasing physical activity through government and policy-based actions affecting the school environment is a contentious issue, resulting in debate among school stakeholders.

The impact on schools of implementing curriculum changes warrants future investigation, particularly implementation of the food and nutrition guidelines as they are specific in their requirements. Prior to the recent physical activity and nutrition amendments, the curriculum framework offered flexibility for individual school interpretations and, thus, implementation of curriculum themes. It is clear, however, that the government is increasing their efforts to reduce obesity, and increased nutrition and physical activity policy requirements could see the curriculum becoming more prescribed and structured. A more stringent framework could be detrimental to schools, potentially restricting the extent to which they are able to meet local needs by customising curriculum themes as they see fit. Additionally, the new food and nutrition guidelines (effective since June 2008) could force schools to offer only approved foods which may trigger a host of other issues relating to catering and food services, profitability and customer satisfaction. On the contrary, curriculum changes regarding promotion of healthy eating and physical activity could ensure school environments support healthy behaviours and complement health promotion learning and activities.

In the end, the impact of government policy on school-based health promotions, and the health practices of children currently in schooling, will likely only be evident when those children reach adulthood. Whether or not curriculum changes contribute to a reduction in obesity, thus, remains to be seen.

Finally, in terms of facilitating school-based health promotions as an Integrated Marketing Communications (IMC) process, government policy has a significant impact. As IMC is typically applied in a commercial sense to communicate with customers, businesses set their own communication objectives. In school-based health promotions, however, the fundamental communication objectives (i.e. to influence children's awareness, attitudes and behaviours with respect to nutrition and physical activity) are required by the national curriculum. Also, businesses using IMC are able to use message channels of their choosing in order to communicate with customers. By comparison, schools have a prescribed message channel, the Health and Physical Education (PE) curriculum, through which messages are delivered to children.

These findings make an important contribution to communication theory as IMC is rarely examined in a social marketing context and we see that use of IMC in school-based health promotions is in contrast to the use of IMC in business settings. Furthermore, the fact that schools must promote health within the bounds of the curriculum could be considered counter to the underlying principles of an IMC approach. Namely, IMC planning starts with profiling the customer in order to determine the most appropriate messages and media for communication, yet schools promote health using set objectives and a prescribed delivery channel. Overall, government policy does not appear entirely prescriptive in terms of school-based health promotions; the curriculum maintains flexibility, but further policy requirements could potentially limit the extent to which a school is able to implement IMC principles.

7.2.2. Community Priorities

As discussed, school-based health promotions are delivered through the New Zealand Curriculum Framework. Schools use the national statements to devise their own curriculum and implement promotions and activities which illustrate the general curriculum themes. The starting point for schools in preparing their curriculum is to identify the needs of their children and community, and focus on specific health priorities accordingly. *Community priorities* form the second component of communication Theme A. Key findings relate to the priorities of each of the case schools and the juxtaposition of community priorities and curriculum requirements. Implications of this juxtaposition for applying IMC in school settings are also included. The findings, as summarised in Figure 7.2 (p. 135) are presented in the discussion which follows.

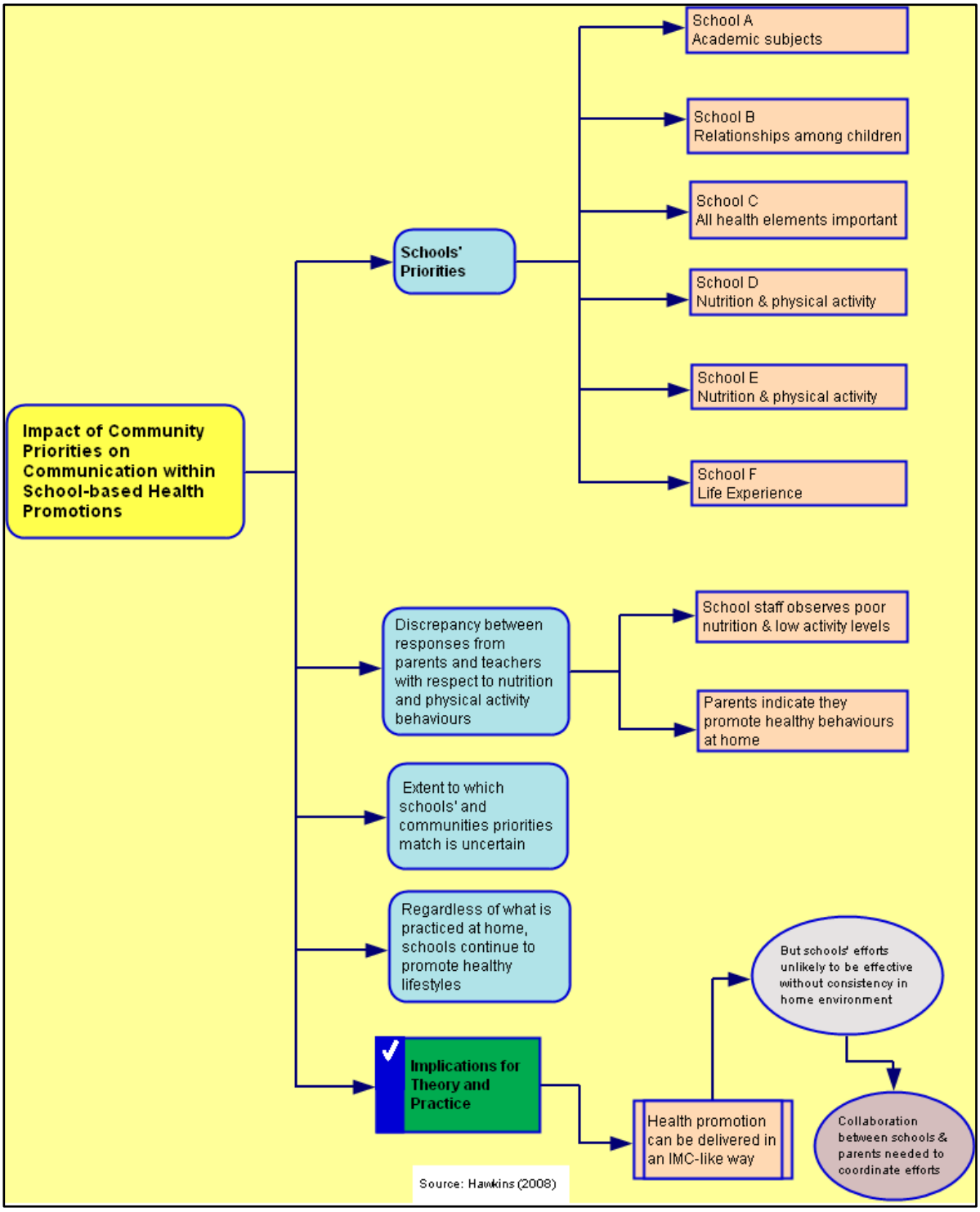


Figure 7.2. Key Findings Contributing to Theme A (2): Community Priorities

Principals and teachers were asked to comment on issues they perceived important for their community and responses indicate each school has unique priorities in terms of health and education. Nutrition and physical activity were the focus of this research, and staff at all six schools identified them as important aspects of health. Staff at Schools D and E, however, highlighted nutrition as a particularly important health issue. This is illustrated in the quotes below.

> FATIMA: I think all staff and [the principal], we all have been concerned about this eating habit... it was a desire to get that into the right way of nutrition and breaking habits.
> INTERVIEWER: So nutrition is a priority health issue for this school?
> PIPPA: Well, I think now it is, but of course it's in the last few years that people have been talking about obesity haven't they? And I mean we had pies in the tuckshop regularly for a good long time and everyone enjoys munching on pies, but pies are meant to be one of the most fat-full things of the lot aren't they, you know? So I think it was, very much so.
> [Teachers, School E]

> INTERVIEWER: What are the most important health issues here?
> GEOFF: I suppose it's about… diet, probably... a variety of good diet... we catch these children who have these inappropriate lunches... and some of them are regular, so that is a problem.
> [Principal, School D]

For the other schools, different health issues were more pertinent. At School B, there are few obese children and the priority health issues revolve around social relationships among children, an issue the principal suggests is common in high decile schools.

> INTERVIEWER: What would the priority issues at this school be, if not nutrition or physical activity?
> RAY: Quite often it is relationships... You can't have money and buy friends; it's a very temporary relationship... Girls can have quite a lot of social issues as they move towards puberty, clothes and prettiness and all that sort of thing become very big particularly for children who are in a higher income group... You can exclude a lower socio-economic person out very quickly because they haven't got [material] things... And so that's one of the problems for a high decile school.
> [Principal, School B]

At School C, there is not one specific priority health issue. As Principal Brian explains, there are a number of health areas addressed within the school, all of which are equally important.

> The most important [issue]… that's actually quite hard... _cause it is a decile five school... Are there any specific issues that come to the fore? Not really. It doesn't mean that they are not important; it means that they don't have a focus that is perhaps more than others.
> [Brian, principal, School C]

Schools A and F both identified areas of focus in health, but meeting academic requirements or providing children with ‗life experience' is considered more important.

> Well, I'm sure if we had a big focus, you know, if we turned the maths and the PE around the other way, I'm sure we would have a backlash. So it's a matter of finding a balance... I guess if we felt we had a problem with children's activity levels, or obesity, or eating habits and that sort of thing, we would look at it and probably do more than we are at the moment... but at the moment for us it's not a priority. [Scott, principal, School A]

> PEPE: For us it is probably working as a school on a selected topic and integrating it as much as possible just to get more experiences for students.
> FELICIA: And developing their experiences, being a decile one school, giving them more life experience... And keeping them up with ICT[54] and still working on literacy and numeracy. Because a lot of parents here don't own computers it's keeping them up to date with things as well. So I think life experience has a lot to do with it. [Teachers, School F]

From these findings we see each school has a different focus in terms of health promotion, based on staff perceptions of priority issues for the student population and school community. Consequently, the extent to which schools address nutrition and physical activity (as the focus of this study) and the ways in which they do so, vary accordingly. This is consistent with Collins, Kearns, and Mitchell's (2006) research in which they found responses to addressing the issue of sun protection in New Zealand primary schools varied according to the perceptions and priorities of individual principals. Similarly, Northfield et al.'s (1997) assessment of school-based health promotion across Australia finds State and Territory curriculum documents and syllabuses form the basis of school programmes, with particular issues selected to meet perceived local needs. Additionally, tailoring health promotion to the needs of students is a fundamental aspect of the Health Promoting Schools (HPS) philosophy, which seeks to identify and meet the health needs of the whole school and its wider community (World Health Organization, 2003b).

One of the basic distinctions between health promotion campaigns and marketing campaigns is that health promotion campaigns are not usually based on the needs of consumers, but rather are based on the public health needs identified by health professionals or government health authorities (Sirgy et al., 1985, cited in Egger, Spark, & Donovan, 2004). In this study, the fact that schools tailor health promotions to the student body is consistent with a marketing approach and IMC characteristic of profiling the customer to determine the most appropriate messages and media for communication. From an IMC perspective, communication should be customer-focused and schools achieve this by designing promotions which they perceive meet children's health needs.

The distinction between *perceived* and *actual* health needs is, however, a consideration. Schools generally make assumptions of children's health needs based on their interactions with, and

[54] Information and Communication Technology

observations of, the children when they are at school. The extent to which the school‘s perceptions of the community‘s health priorities accurately match actual health priorities is unknown. This knowledge gap is important; even though children spend approximately 30 hours per week at school, the rest of the time they are in the care of their parents (or other adult caregivers) and school staff are unsure of the extent to which health behaviours at home are consistent with those promoted and practiced at school.

Although school staff may be sceptical of what health behaviours are practiced at home, responses from the parent survey indicate they, too, perceive good nutrition and regular physical activity to be important. As discussed in Chapter Six (section 6.4.3, p. 111), parents reported they (themselves) generally eat a balanced diet. Some suggested they could make improvements, for example by reducing their consumption of ‗treats‘ or increasing their consumption of fruit and vegetables, but typically parents indicated they concentrate their efforts on ensuring their children eat well. Physical activity patterns among families are perhaps more dubious (as evidenced by the wide ranging responses regarding activity levels (also section 6.4.3, p. 111)), but again, many parents reported they encourage their children to be active despite admitting they do not exercise themselves.

Collectively, the case data revealed discrepancies between responses from school staff and parents about promotion and practice of healthy behaviours among children. Parents indicated they promote healthy behaviours at home, yet school staff observe poor nutrition and low physical activity levels at school. Again, the notion of priorities is important and while parents claim they promote healthy eating and physical activity, schools are sceptical when they observe behaviour which suggests parents‘ priorities lay elsewhere. The following quote from Principal Jane regarding children‘s involvement in co-curricular sport is a prime example.

> Well, isn't it hard to know when they, when they're given the opportunity of the girls to play netball and all they had to do is get them here to the school on a Saturday. The practices happen right here at school and the uniforms were provided and all they needed to, you know, provide for them was the fees and even so we had a lot of students that didn't turn up because the priority wasn't there for the parents so whereas in many homes they'd say, "No, no, no, you can't go to Aunty‘s with us, you've got to play netball", it was, "No, never mind netball, we'll go to Aunty‘s today" so they weren't encouraged in that way. Unfortunately, they're not being given the message from home about involvement in sport, organised sport isn't their, isn't their priority. [Jane, principal, School E]

There are a number of other potential explanations to account for discrepancies in staff and parent responses. The diet and exercise patterns reported by parents may, for instance, have been embellished for social desirability, or perhaps some parents‘ perceptions of what constitutes a balanced diet and adequate physical activity are inaccurate. If the latter is true, then those parents may perceive they are promoting and practicing healthy behaviours even if they are not (which

would account for e.g. the unhealthy lunches teachers frequently observe at school). Alternatively, and perhaps more likely for the majority of parents, it may simply be that despite good intentions, health promotion and health behaviours are subject to the conditions of everyday life. That is, conditions such as busy schedules or financial pressures may, at times, be less conducive to engaging in healthy behaviours than desired. In this thesis, factors impacting upon communication processes within school-based health promotions and related behaviours are categorised as communication noise, skills and abilities, and environmental conditions. These form Theme D, Environmental Contexts, as presented in Chapter Eight.

The parent survey sample is also relevant when considering the contrast between schools' and parents' responses regarding the promotion and practice of healthy eating and physical activity. The parent sample largely represents high decile parents, who likely have higher education and income levels than lower decile parents. This potentially enables high decile parents to promote and practice healthy behaviours to a greater extent, when compared with low decile parents. Moreover, irrespective of decile (or any other demographic factors which may influence perceptions), the parents who completed the survey may be those with a particular interest in nutrition, physical activity and obesity related issues. The poor health behaviours observed by teachers may, therefore, relate to children whose parents did *not* complete the survey.

Another explanation for discrepancies between school staff and parent responses, is that staff may have emphasised extreme cases (e.g. of unhealthy lunches, eating habits or physical activity levels) to illustrate a point during their interviews. Children acting of their own free will may also contribute to the conflicting views of parents and staff. This is because despite the intentions of adults, children may, for example, purchase unhealthy foods for themselves (e.g. on the way to school and without parental consent), pressure parents to buy processed snack foods for their lunches, or opt to engage in sedentary rather than physical activities.

Regardless of what is practiced at home, schools endeavour to create awareness and establish positive images of a healthy lifestyle through positive associations (including staff acting as healthy role models). While nutrition and physical activity is a priority for some of the case schools more than others, they all influence health behaviour by providing opportunities for children to engage in healthy eating and physical activity. When considered from a marketing perspective, schools appear to deliver health promotions, to some extent, in an IMC way, by communicating health concepts to children and establishing the school as an environment which supports healthy practices.

In the particular context of school-based health promotions, however, there is also the home environment to consider. That is, an IMC approach is typically adopted by businesses to achieve

consistency of communications, but school-based health promotion efforts are unlikely to be effective without consistency in the home environment. To achieve success in school-based health promotions, the apparent discrepancy between health practices at school and at home needs to be overcome. The existence of such discrepancies, in fact, highlights the need for a consistent and coordinated approach to health promotion, for which the application of IMC principles is ideal. The application of IMC to improve communication effectiveness in the social marketing context of school-based health promotions is, thus, supported. Yet, to coordinate health promotions targeted toward children would require collaboration between schools and parents. This is the focus of Theme B, Stakeholder Roles and Relationships, discussed in the following section.

7.3. Theme B: Stakeholder Roles and Relationships

One objective of this study was to analyse stakeholder perceptions and expectations of health promotions in order to determine the impact of communication processes on implementation of promotions. Specifically children‘s exposure to promotions and outcomes of those promotions were investigated. In meeting this objective, findings showed communication processes were impacted upon by the *roles* stakeholders perceive of themselves and each other in health promotions. Also, the extent to which consistent health messages are communicated to children is related to the *relationships* between stakeholders. Stakeholder roles and relationships form communication Theme B, the key findings of which are presented in the following discussion and summarised in Figure 7.3 (p. 141).

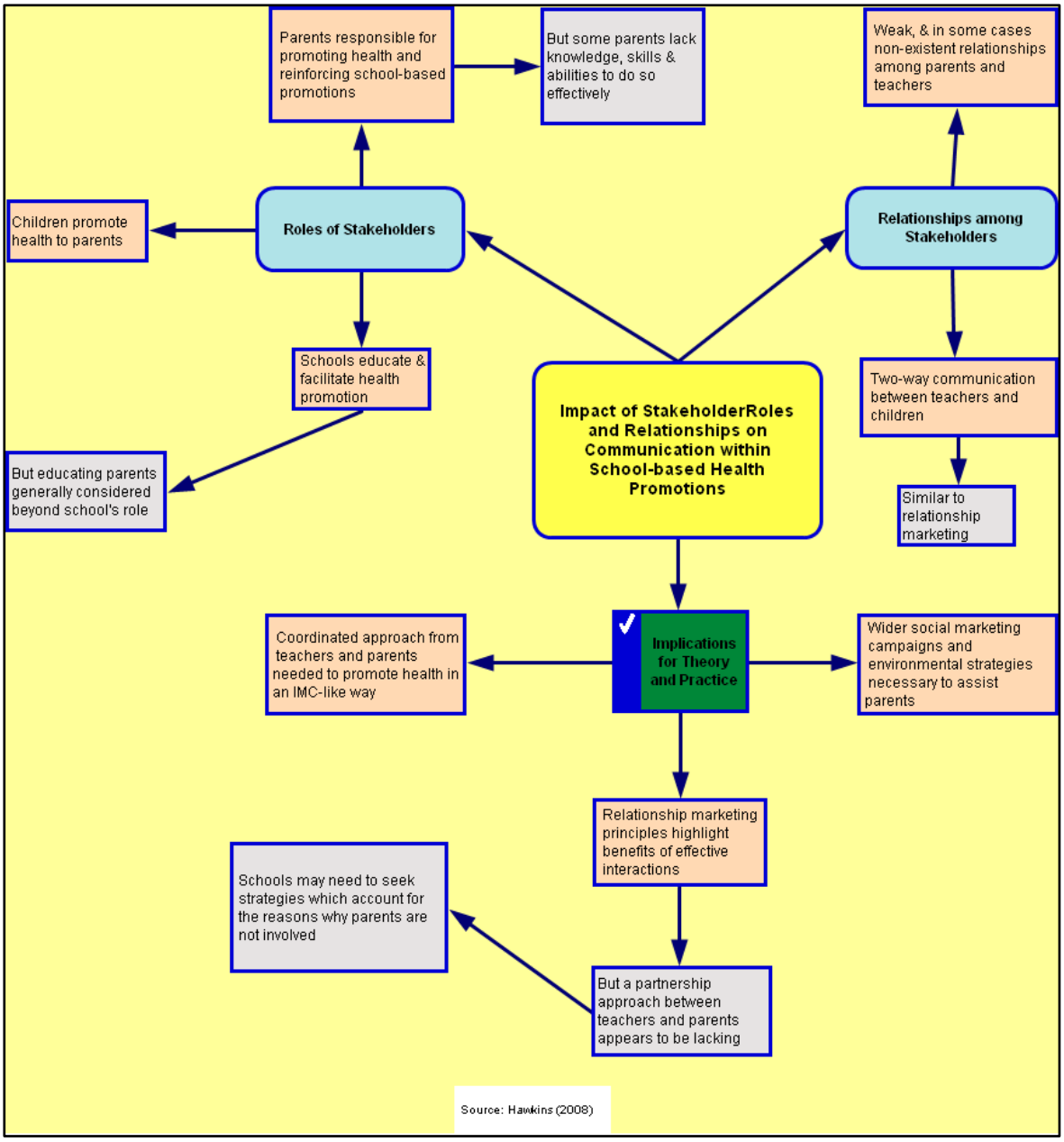


Figure 7.3. Key Findings Contributing to Theme B: Stakeholder Roles and Relationships

Through discussions with staff it was established the primary role of school-based health promotions is to educate children, but a secondary role is to facilitate health communication between children and parents. According to staff, children play an integral role in communicating information they have learnt at school to their parents at home. Parents‘ expectations of schools are to develop children‘s understanding of health, teach skills needed for health, motivate them to engage in positive health behaviours and offer fun opportunities to do so. Children, too, identified their teachers as people from whom they learn about health, and school as an environment in which they study and engage in positive health practices.

The role of schools in health promotion as outlined by the participants in my study is consistent with what is documented in education and health literature. Schools help children acquire life skills needed for health, such as decision-making, problem-solving, critical thinking, and communication skills (Fleming & Parker, 2007). School-based health promotions can improve student understanding of health, develop decision-making competencies regarding behaviour which influences health, and teach skills needed for students to engage in behaviours conducive to health. Research on the role of schools in facilitating health communication between children and parents, and on the role of children themselves as communicators, is sparse.

Although not in the context of nutrition and physical activity, there are studies which indicate child-initiated communication can be an effective means of teaching parents about health. Evans, Clark, Levison, Levin, and Mellins (2001), for example, examined the American Open Airways for Schools (OAS) programme designed to improve self-management skills of children with asthma. The authors assert dialogue surrounding communication about health care management predominantly assumes the flow is from parent to child. The impetus for their study was, therefore, to examine the extent to which children initiate health communication with parents. The findings indicated encouraging children to communicate with parents about asthma, using homework assignments, coupled with written materials for parents, is effective in both increasing child-parent communication and in changing parents‘ asthma self-management behaviour.

Hopkins (2005), in his study of family communication regarding two pro-environmental public information campaigns, finds similarly that children have a capacity to instigate change in family behaviours and stimulate discussions which either change existing behaviours, or lead to new behaviours. The findings of my study, consistent with both the aforementioned studies, also provide support of the potential for children to improve family health behaviours as they initiate discussion around nutrition and physical activity at home and involve parents in school-based promotions.

The role of parents in health promotions, from the perspectives of school staff, is to promote health and reinforce school-based promotions. Parents, too, perceived themselves as being responsible for the care of their children, including providing nutritious meals and encouraging physical activity, educating them on health topics, and ensuring positive practices are supported in the home environment. Parents also considered role modelling important. Findings of the parent survey, however, showed many parents concentrate on ensuring their children eat well and are physically active, yet they admitted to eating poorly and more commonly, being physically inactive themselves.

The fact that some parents engage in poor behaviours despite promoting positive behaviours to their children is consistent with research by the New Zealand Health Sponsorship Council (HSC).

The HSC also found parents‘ eating behaviours are often less healthy than the behaviours they are trying to encourage in their children (Whitfield et al., 2007). Certainly, ensuring children engage in healthy practices is commendable, but responses from children in my study indicate parental modelling is a powerful mechanism for promoting desired behaviours, as illustrated by the following quote from two girls at School F.

> DEBBIE: It's important [for parents] to be a role model for their children.
> MELISSA: If parents aren't eating healthy and exercising, why would their children because they are not setting a good example?
> [Children, age 11, School F]

Moreover, children communicated negative feelings towards engaging in healthy behaviours when their parents are not engaging in those behaviours themselves. The quote from children at School E below highlights this point. Parents who do not model healthy behaviours are, thus, contributing to the formation of negative, rather than positive, attitudes towards healthy behaviours among children, which may be detrimental to children‘s health long term.

> INTERVIEWER: Do you think your parents do enough exercise?
> ALL: Nah! Noooo.
> KYLE: My mum and dad don‘t do any.
> SIAKI: My Dad doesn‘t.
> SIO: My dad tells us to do it but he doesn‘t do it.
> INTERVIEWER: How does it make you feel if your parents don‘t do it but you have to?
> SIO: Angry.
> LEE: I‘d be like embarrassed… no frustrated.
> KYLE: I‘d say, nah… let‘s not do exercise.
> INTERVIEWER: Why would you be frustrated?
> SIO: Cos you don‘t want to do it.
> KYLE: And they‘re forcing you.
> INTERVIEWER: How would you feel if they [exercised] with you?
> SIO: I‘d feel like happier.
> [Children, aged 9-10, School E]

Children‘s acquisition of health values and behaviour through parental role modelling is well documented in child health literature (Tinsley, 2003). Parents, whether they engage in health-enhancing or health-damaging behaviours, are teaching those behaviours to children, who may learn and adopt similar behaviour by imitating them. Dalton (2004) and Escobar (1999), for instance, suggest children‘s acceptance of foods follows the example of parents and siblings. Eating nutritious meals together can increase the consumption of vegetables and lower the consumption of high fat foods. Parental involvement in modelling positive eating practices is crucial, as it is more likely to be effective in reaching children than simply teaching them about nutrition (Escobar, 1999). Likewise, physical activity behaviour is also affected by parents (Dietz & Gortmaker, 2001) and family involvement is integral in shaping children‘s exercise experiences (Thompson & Shanley, 2004; Tinsley, 2003). Children tend to be more active when parents model physical activity and support their participation in the activities they choose.

Although children see parents as role models, and schools expect parents to promote health at home, staff perceived some parents lack the knowledge, skills and abilities to communicate messages and engage in practices consistent with those promoted at school. Hart, Herriot, Bishop, and Truby (2003) assert parents are potentially powerful education intermediaries in improving the health behaviours of children; however, they need the necessary knowledge and motivation to do so. Compliance with dietary guidelines, and the skills needed for dietary change, for example, is influenced by a range of factors. In particular, Hart et al. note that the impact of socio-economic status on nutrition knowledge and access to affordable healthy food is well-documented. These topics, including parents' life skills, are discussed in detail within the Home Environment component of Theme D, discussed in Chapter Eight (section 8.3, p. 161).

The presumed lack of knowledge and skills among parents gives rise to the issue of whose role it is to educate parents so they are equipped to teach their children healthy lifestyle behaviours. As illustrated in the following quotes, for Principal Scott of School A, educating parents is a community problem rather than an educational one; similarly for Principal Geoff of School D, educating parents is beyond the scope of their school's services.

> You know, it's not an educational issue as such... it's a community problem, a society problem. I don't personally see it as being part of the school's role... particularly working with parents.
> [Scott, principal, School A]

> Well, I mean we have a good, arguably, we have a site where it can be delivered, but whose job is it? I suppose... if we're trying to get parents educated, I suppose we're looking at health professionals. If we're looking at the children educating the parents, which I think happens a bit, then we can, teachers have a big role in that they deliver health programmes to children. But... as teachers we don't cater for parents.
> [Geoff, principal, School D]

Principal Russell of School F asserts educating parents is not the school's core business, but regardless, he sees the underlying issue is parents taking responsibility for themselves and their families.

> When people start taking responsibility for themselves, I think it's like us making stands on certain issues, as a school, this is the parents' job. You're abdicating your responsibility as parents by putting it onto the school, but that is not what our core business is and what we're about. So personal health issues I think communities and people have to start taking some responsibility for themselves.
> [Russell, principal, School F]

In contrast to the other principals, Principal Brian of School C regards educating parents as an important part of the school's role.

> I think actually it is very important... we are in the business of education. We deal with parents all the time and we regard part of our job at school is to educate parents, as well as kids.
> [Brian, principal, School C]

The principals of School B and E did not specifically address the issue of school's educating parents. Although they were prompted with similar questions to the other principals, both focused on other means (besides schools) of educating parents. Principal Ray of School B commented on the role of children in promoting health to parents, and Principal Jane of School E discussed government-led approaches to health education for parents.

> The parents who demonstrate it, you know, they will verbalise it and say, "Oh gosh, when we go to the supermarket we don't take the children because they are always telling us we must buy this because it's the healthy option". And so children are communicating and children are wonderful communicators now days.
> [Ray, principal, School B]

> When we had the display in the dental clinic there were parents coming in absolutely aghast, they had no idea the amount of sugar and fats that were in food they were giving to their children, none whatsoever. That would be a very good start for the Ministry of Health to provide all the schools with a mandatory display of those things. But, yeah... and [advertisers] should only be allowed to advertise on the television as a healthy alternative, healthy food. And if they make us have on our packets of cigarettes, government warnings, why don't they do the same with food? Yeah, the government could do that sort of thing.
> [Jane, principal, School E]

Although three of the principals indicated it is not their responsibility as schools to educate parents, some teachers find themselves in a position where they believe it is necessary to do so for the sake of improving the health and learning outcomes of the children they teach. As Fatima of School E explains in the quote shown below, educating parents is important when as teachers they regularly observe children with unhealthy lunches, particularly children in their first year of school.

> We see this poor nutrition in very new entrants [Year] one and we need to contact their parents... I strongly believe the first step is educating parents, you know. We talk to them and we explain —no good food: no brain"... They can provide food, this is what I explain to them, they can provide cheaper food and healthier food and I explain to them what I mean.
> [Fatima, teacher, School E]

In literature searches for my thesis, no research was found which specifically examined the issue of schools promoting health to parents. In Northfield et al.'s (1997) report on school-based health promotion in Australia, however, the authors discuss the apparent contentiousness surrounding what constitutes a school's _core business' with respect to the incorporation of health promotion into education. They suggest perceptions of what the core business is for the health and education sectors is a particular cause of tension when schools are viewed as settings in which to promote health, rather than environments which can be made more health promoting.

In the Northfield et al. (1997) study, key informants argued the core business of schools is educational outcomes and promoting health did not fall specifically within these. The informants suggested the health sector has been guilty of pushing their core business of reducing illness and

disease, increasing positive health behaviours (such as immunisation) and reducing negative health behaviours (such as smoking) onto schools. Similarly, school staff in my study highlighted the pressure of a crowded curriculum and the expectation placed upon them to teach children academic subjects as well as covering a wide range of social themes in learning (e.g. road safety, water safety, accident prevention, ‗stranger danger' among many others). As such, regardless of whether schools are inclined to educate parents or not, the reality is most schools would not have the necessary resources for dedicated parent education programmes.

To complicate matters, while schools endeavour to support and promote healthy practices, there are limits to the extent of their authority in dictating those practices, particularly with respect to lunches and eating behaviours. Generally, schools support healthy eating by offering healthy tuckshop options, but there are differing approaches to addressing lunches brought from home. As illustrated by the quotes below, School E has achieved positive outcomes in terms of children's lunches and eating habits by prohibiting certain foods. For the other schools, as highlighted in the discussion below from teachers at School C, there are no official policies, but certain foods, such as carbonated (‗fizzy') drinks, are confiscated from children.

> The school policy now bans fizzy drinks, bans all sorts of things.
> [Anita, teacher, School E]

> SOPHIA: There is a rule that you are not allowed, and children have brought, huge bottles, like two litre bottles of fizzy, and that is taken off them and any big bags of chips... we do monitor that sort of thing.
> GREER: Lollies and those things that we have found in the playground.
> SOPHIA: They are taken and often kept.
> [Teachers, School C]

Teachers reported they have little control over children's lunches brought from home and regularly observe children eating packaged foods of low nutritional value (e.g. potato chips and muesli bars). While there are numerous possible reasons why children bring to school the foods they do, teachers suggested parents' nutritional knowledge is a key factor. Based on what is observed in children's lunches (and discussed with children and sometimes parents), teachers can identify parents who appear unaware of the sugar and fat content of the foods they give their children, and others who appear well-meaning, but are still, in fact, choosing unhealthy foods. As the quotes from school staff on the following page suggest, policing foods and dealing with parents is problematic and where possible they simply reinforce key health messages to children through encouragement and praise of positive behaviours.

> INTERVIEWER: But are there specific policies in the school, like certain foods that they cannot bring or…?
>
> GEOFF: No, we haven't done that. You know, that's a can of worms that... We'd end up going through their lunch boxes and stuff like that... and that's just getting too intrusive… I don't agree with that... they know we don't like them bringing along fizzy drinks and stuff at school. We haven't told them they can't, but I guess when they do that sort of thing the teachers ask them about [it]... but it's done more by positive reinforcement than punitive.
> [Principal, School D]
>
> NURU: It's not easy. I mean, what do you say to them? So, I don't think it's easy to approach any parent with their children about giving them food at school. Sometimes teachers tend to stay away from contacting parents for that reason because it's very hard to tell them, what are you going to tell them?
> [Teacher, School D]
>
> RUSSELL: I mean we don't go there as a school, it's a parental issue or a community issue; it's not our role to tell them what is not acceptable in lunches.
> [Principal, School F]

A key issue for staff is that they perceive discrepancies between what is communicated and practiced through school-based promotions, and what is communicated by parents and practiced at home. The quote from Penny at School D below is an example which illustrates this point. Discrepancies between home and school environments mean children may be receiving inconsistent messages, thus reducing the effectiveness of promotions from school.

> INTERVIEWER: What kind of messages do [children] see at home?
> PENNY: The wrong ones. When I go down to the local supermarket I'm horrified at what I see parents put in their trolleys.
> [Teacher, School D]

Social marketing campaigns[55] could benefit parents by providing health information to enable them to promote to their children healthy behaviours consistent with school-based promotions. The *Feeding our Futures* (FOF) campaign was, in fact, designed to achieve this: to assist parents in establishing good eating practices for children, consistent with (government recommended) nutrition guidelines and practices promoted in schools (Health Sponsorship Council, 2007). Provision of information alone, however, is unlikely to achieve significant changes in health behaviours (Egger et al., 2004). Parents interested in promoting healthy behaviours, for example, are probably aware of current nutrition and physical activity campaigns (particularly as nutrition, physical activity and obesity are topical in media), and already actively seek information to improve their family's eating and exercise habits. Conversely, those unaware of their poor health habits, or unmotivated to change them, are the most likely to need health promotion information and potentially the least likely to pay heed to it.

[55] Such as the nationwide *Feeding our Futures* (FOF) healthy eating campaign (launched in May 2007) and the long-term *Push Play* physical activity campaign (launched in 1999).

In addition to social marketing efforts, creating supportive environments (a key action area detailed in the Ottawa Charter for Health Promotion) is essential to engaging populations in positive health behaviours. Egger et al. (2004) suggests changes in public policy, regulation and legislation (among others) as approaches to adapting the environment. The report of the Health Committee Inquiry into Obesity and Type 2 Diabetes in New Zealand (2007) concludes social marketing efforts to change health behaviours are of limited use unless supported by environmental changes to the social, cultural, physical and economic environments. Environmental measures are considered necessary to make healthy behavioural choices easier for the population. One environmental change taking place in school environments, as discussed within Theme A of this chapter (section 7.2.1, p. 129) is the move towards healthier tuckshop offerings, which became an official component of the school curriculum in June 2008.

Thus far, the discussion for Theme B has centred on the impact of stakeholder *roles* on communication processes within school-based health promotions. Now the discussion turns to stakeholder *relationships*. First are relationships between schools and children, as children are the target of health promotions and schools are the communication source of those promotions.

At school, children are continuously exposed to health promotion messages from teachers through role modelling, classroom learning, physical activities, and discussions about food and lunches. Teachers‘ main communication tool is personal selling, and face-to-face interaction results in two-way communication with immediate feedback. Drawing on the marketing theory underpinning my conceptual framework, we see that teachers‘ facilitation of school-based health promotions is like an IMC approach to promotions. That is, teachers continually adapt communication to meet the needs of children. Consequently, communication is more likely effective, resulting in positive promotion outcomes.

Interactions between teachers and children are also similar to interactions in relationship marketing processes. A relationship approach places customers at the centre of marketing rather than products (Grönroos, 2004). Similarly, in school-based health promotions, teachers primarily focus on interactions with children (customers) rather than health promotions (product). The relationship proceeds in an interaction process where various types of contacts occur between teachers and children over time. These interactions lead to a dialogue process where information is shared and knowledge is created among the parties (Grönroos, 2004). Again, we could expect positive promotion outcomes as a result.

When it comes to relationships between schools and homes, however, school staff perceive their relationships with parents are weaker than those with children, and in some cases, non-existent. From a marketing perspective, as schools are the suppliers in the relationship and children are

customers, we might ponder why a relationship with parents is necessary. Teachers recognise though, that parents are also communicating health promotion ideas to their children at home. Children may receive messages directly by discussing health with parents, but also learn vicariously from parents‘ health behaviours and the nutrition and physical activity practices established at home. Ideally, health promotion messages need to be consistent across the home and school environments in order to increase their effectiveness. As both schools and parents are involved in promoting health, a coordinated partnership approach would, therefore, likely yield positive results.

School staff in my study indicated that in reality it is difficult to establish and maintain partnerships for health promotion, particularly if parents are unwilling to engage in such a relationship. Consequently, staff perceive they often bear the majority of the burden in promoting nutrition and physical activity to children. Teachers are unsure of the extent to which healthy behaviours are promoted and practiced at home and feel many parents have relinquished their responsibilities to promote or reinforce healthy behaviours. These sentiments are illustrated in the quotes from school staff shown below.

> I feel really helpless. Like, I feel like, what can we do with parents, if parents aren‘t going to get on board? I think it‘s a huge, huge issue.
> [Angela, teacher, School C]

> Teaching and learning happens in a more efficient way if there is a partnership between home and school, but sometimes it is actually a struggle to make that happen.
> [Brian, principal, School C]

> You know, while you're trying to foster these relationships sometimes there is no relationship in terms of the community feeding back into the school.
> [Russell, principal, School F]

In education literature, parental involvement in children‘s learning and the parent-school relationship is well-researched, and it is evident stakeholder roles and relationships are relevant. One researcher, Gill Crozier, has published several studies on these topics. Based on data arising from a project on parental involvement, Crozier (1997, 1999) finds a strong reliance among working-class parents on teachers as professionals to do the job of educating their children. Parents in the study considered teachers to be more knowledgeable than them and, thus, in a better position to educate their children. While the study was concerned with education in an academic sense, the findings offer a potential explanation as to why some parents might not engage in promoting health to their children to the same extent as teachers. That is, if parents believe teachers are better equipped to promote health then they might abdicate themselves of that responsibility.

Along with parents‘ roles in education, Crozier (1997) considered the extent to which parents understood children‘s educational needs. She viewed parents as consumers and suggests parents need to know about the ‗product‘ they are ‗purchasing‘ and why they would want to ‗buy‘ it.

The working class parents in her study did not appear to fully appreciate the educational needs of their children, whereas middle-class parents monitored their children‘s academic progress and were in good stead to interpret information they were given about their children. Crozier‘s assertion is relevant for my study, as it indicates some parents may not involve themselves in health promotion because perhaps they do not fully appreciate that good nutrition and regular physical activity are important factors in achieving successful academic learning. Indeed teachers in my study made comment to this effect. More broadly, school staff indicated parents, particularly those of low socio-economic status, tend to value education and health promotion to a lesser extent which impacts upon the transference of knowledge and practices to children. These sentiments are encapsulated in the following comments from principal Brian of School C.

> INTERVIEWER: Do you think [health promotion] carries over into the home environment?
> BRIAN: To what extent that occurs is… partly socio-economic, in that in lower socio-economic areas there is less of an appreciation of the importance of education… so in those areas, less, there would be less transference of knowledge from the school to the home, or less appreciation of the importance of that acquisition of knowledge... It‘s easy to say, to make a statement ―home-values-school”. Well, that is actually not always the case.
>
> When adults have… appreciated the need, perhaps to focus on nutrition and fitness that will be passed more onto children. And adults are, are in the community, but they are also teachers. You know, it‘s not possibly normally looked at in the other way round. If you teach kids then they will end up growing up with it and they‘ll go into adulthood with it, but in fact it‘s the adults who teach them, who give them those perceptions or lack of those perceptions.
> [Principal, School C]

Crozier (1999) suggests partnerships between schools and parents are also impacted upon by the way in which schools promote parental involvement using the same strategies for all parents, irrespective of parental needs, social class and individual circumstances. Coupled with the fact the strategies are constructed from a logocentric perspective, this serves to reinforce parents‘ perceptions that teachers ‗know best‘. Crozier concludes such an approach taken by schools to promote parental involvement does little to encourage parents into a more proactive partnership or to develop a more inclusive participatory role for parents. Overall, although Crozier‘s studies are concerned with parental involvement in children‘s academic learning, and involved parents of children attending secondary schools, the findings offer important potential explanations for parental involvement in school-based health promotions and the relationships between parents and teachers.

To conclude, stakeholder roles and relationships impact upon communication processes within school-based health promotions resulting in differences in health promotion in the school and home environments. As the discussion has shown, both teachers and parents see health promotions as important. To communicate health effectively, that is, using IMC principles, teachers and parents would need to develop a coordinated approach. In order to foster relationships with parents, schools

may need to seek strategies which account for the reasons why parents are not involved in health promotion in the first instance. More broadly, social marketing campaigns and environmental strategies are needed to assist parents in engaging their children in healthy behaviours consistent with those promoted at school.

7.4. Theme C: Health Promotion Approach

One objective of this study was to explore whether communication processes within HPS are more or less effective than those within non-HPS, given HPS focus specifically on incorporating health promotion concepts into school life. The objective was also to explore what (if any) impact being an HPS (or not) has on health promotion processes and outcomes. Theme C, Health Promotion Approach, encompasses *how* schools promote health, and includes findings which address this objective. Overall, key findings, as summarised in Figure 7.4 (p. 152), show that HPS and non-HPS communicate health in different ways, that is, they have different *approaches* to health promotion. Moreover, key features of the HPS approach are similar to that of an IMC approach, and as such, the HPS approach is likely to be more effective than less coordinated health promotion efforts. Consequently, as an HPS, health promotion concepts are communicated through all aspects of school life, resulting in positive health outcomes. The discussion in this section elaborates on these findings relating to Theme C.

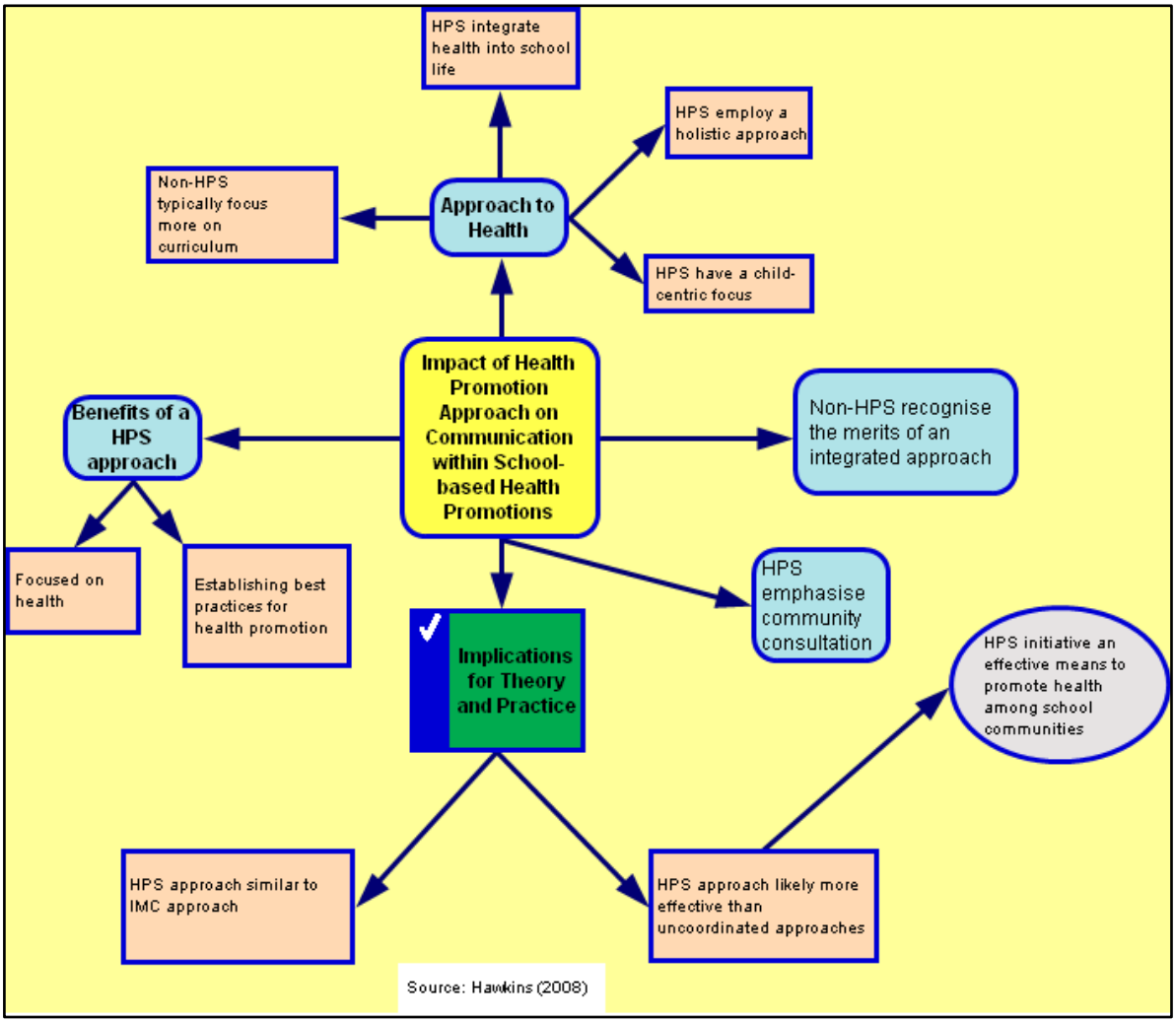


Figure 7.4. Key Findings Contributing to Theme C: Health Promotion Approach

A key difference between HPS and non-HPS schools is the way in which health and health promotion is viewed by school staff. When asked how health is promoted in their school, staff at HPS explained a holistic approach to health, incorporating a child's personal, physical, emotional and spiritual well-being. HPS also focus on establishing the school environment as one which promotes and supports healthy practices. With a holistic view of children's health, and by improving the environmental conditions of the school, all aspects of health are, therefore, considered in all aspects of school life. The quote below from principal Ray of School B highlights this point.

> We try and do it a number of ways because we're aware that it's not just, not just nutritional health or physical, it's mental health so we do try and make sure that we have a wrap-around type of approach to it and everything we do at this school I think is… underpinned by that, that belief that we can actually do something about making a healthier school in all senses.
> [Ray, principal, School B]

Another characteristic of the HPS approach to health promotion is that it has a child-centric focus. In this way, HPS are operating in a manner consistent with the principles of IMC, in which

communication processes start with the customer or prospect to determine relevant messages and communications methods to be used. Furthermore, not only is the HPS approach driven by a desire to meet children's needs, but children are also involved in identifying health issues they perceive as important and designing and implementing health promotions to address those issues.

> The health team don't drive anything that goes out to the teachers and says, "You will now do a unit on healthy eating"... That comes through our normal cycle of units in health anyway so it has very little impact on the curriculum and it's more reaching out there... to be a Health Promoting School's school you're very child-focused.
> [Jane, principal, School E]

> Health Promoting Schools philosophy is, is to have as much children involvement as possible, which is a great thing.
> [Ray, principal, School B]

In addition to 'starting with the customer', the HPS approach emphasises integrating health concepts and healthy practices into all school activities. This is another key feature of the IMC process; using all relevant media and achieving communication synergy by presenting the same message consistently across all points of contact. For HPS, health concepts are incorporated into topics of study and daily school life, with the school environment supporting healthy eating and activity behaviours (among others).

> We can actually take a curriculum delivery of a health and nutrition unit, but we can do better than just teaching them for those three weeks on health and nutrition, we can make it a whole overview for school practice and so it's bigger than the curriculum.
> [Ray, principal, School B]

> It's a, a daily thing, a regular thing... a three week study on healthy food doesn't do a lot.
> [Jane, principal, School E]

Participating staff at HPS were positive about the impacts of the HPS initiative on their school. The benefits of a holistic approach to health promotion included being more focused on health and establishing best practices for incorporating health into school life. In essence, the HPS philosophy serves as an enabler for integration, providing schools with a framework and process for integrating health promotion concepts into teaching, learning and the wider school environment.

> There was always an awareness… I don't think we we're doing nothing before Health Promoting Schools came along but what it would have done, it would have focused us more and made us reflect better on what we were doing and refine what we were doing.
> [Geoff, principal, School D]

> I'm not sure we could run it without being a Health Promoting School. But the very essence of it, the way we introduce something, the way we continue to sustain it, is health promoting. And that's why Health Promoting Schools is so good... it's almost like a form of overlay that just assimilates good practice.
> [Ray, principal, School B]

By comparison, staff at non-HPS schools each identified curriculum as the starting point for health promotion. As the quote from principal Russell of School F shows, the curriculum serves as a foundation for what is promoted and there is a strong emphasis on information delivery among non-HPS.

> There is the school curriculum... All throughout the year there have been health units of study in the classes.
> [Russell, principal, School F]

At non-HPS schools, few staff were aware of the HPS initiative and even fewer were familiar with what the initiative entailed. Even so, some staff, such as teacher Laura of School A, admitted a coordinated approach to health promotion could improve health outcomes.

> I think, in truth, if we were going to do it, you would have a huge initiative throughout the school and the community. And it's been very piecemeal. So unless that happens, you know, if you're just trying to set up little bits, I don't think it's going to succeed. You've got to have a whole full out drive and then you will get a turn around.
> [Laura, teacher, School A]

A final point of differentiation between HPS and non-HPS is that HPS emphasise community consultation for health promotions. The HPS approach to health promotion emphasises involving school and community stakeholders (e.g. school staff, parents, children, local community groups etc.) in all elements of the HPS process, including identifying health issues, and developing and implementing means to address those issues. It is not to say non-HPS schools do not inform or involve parents, but for HPS, an inclusive, two-way communication process between school staff and parents is a fundamental element of the HPS philosophy. Two-way communication is achieved by schools regularly seeking input from parents and the wider community, and encouraging them to participate in school health teams and be proactive with respect to initiating health promotion activities. Staff at each HPS in this study provided examples (as shown below) of situations in which the school had sought feedback from the community, or involved parents in proposed changes within the school.

> Our canteen, or our lunch provision, got totally overhauled and we trialled with the children choosing what they bought from the healthy tick menus... we sent out information to parents… and they had a return slip and they, if they wanted to comment on it. So we could then gauge their [responses].
> [Ray, principal, School B]

> There were surveys done, lots of surveys... With parents and children, raising awareness in the community... They came onboard and there was a Health Promoting School committee... there were a group of parents who were quite keen to get on and do it, be part of the committee, yeah.
> [Geoff, principal, School D]

> Initially, we launched the health team with a huge health day, it was enormous, it was on a Saturday. And we invited health providers in the community. We had doctors, Waitemata Health, Pasifika Health, the Heart Foundation, the Asthma Society; everybody came and set up a stall with free advice. They were doing free diabetes checks, free heart checks, all this sort of thing… people donated healthy food, people like, we even had Lite Licks ice cream, we had Iron Brion, we had the Milo van, so there was masses of free food and we got a huge crowd… and there was a big draw prize for everyone who filled in a survey and from that we got the community's health priorities. And by community I mean the wider community... this was open to the wider public. And we got their priorities… So we just went through that list and dealt with them one after the other.
> [Jane, principal, School E]

Community involvement is particularly important in health promotion as noted in the earlier discussion of health priorities (within Theme A, section 7.2.2, p. 134). Community interaction is vital given the fact that there may be discrepancies between what schools perceive as priority health issues for their community, compared with the community‘s own perceptions of health needs. In schools where community involvement is strong, we might expect to see the development of a shared vision for health promotion, where all stakeholders have opportunities to raise issues of concern or give input to potential promotional activities.

School E is a good example of an HPS which has worked on addressing health issues identified by the community. A crucial point, as explained by principal Jane below, is that the high priority issues identified by the community were not necessarily those the school expected. Likewise, health issues school staff were keen to address (such as improving diet) were not considered highly important by community members. Nevertheless, by starting with the issues most important to the community, and involving parents and community members in health promotion processes, the school has been able to develop an agenda for health promotion which incorporates addressing a wide variety of health issues to satisfy the needs of all stakeholders.

> We found that the top priorities in the first instance were things such as access to health, nits, school sores or impetigo… bullying was not high on the list. The highest were those… dental health, all of those issues. So we just went through that list and dealt with them one after the other. We've got to bullying and although that was low-ish on the list it became the biggest issue to deal with for them... diet was very, was very low on the list and that's our community, but we eventually got to healthy food and from that we, we've just won the Heart Beat award and that's being presented at assembly.
> [Jane, principal, School E]

As the discussion has shown, features of the HPS approach are similar to that of an IMC approach, suggesting IMC is applicable in the social marketing context of school-based health promotions. IMC is customer-focused and likewise the HPS approach starts with children and seeks to achieve communication synergy by coordinating all relevant forms of communication and delivering consistent messages to children over time. IMC is also concerned with building relationships, which can lead to repeat purchases and generate brand loyalty. The development of

relationships between school staff, parents and community members has a similar effect in HPS, whereby stakeholders are encouraged to remain involved in health promotion processes, and doing so strengthens the concept of ‗healthy living' (i.e. the brand). Finally, IMC is concerned with influencing behaviour. HPS address health issues in such a way as to not only increase awareness or engender favourable attitudes, but also to provide opportunities for children and community members to engage in health-enhancing behaviours. From a marketing communications perspective, an IMC approach is considered more effective than non-integrated or uncoordinated approaches to communicating with customers. As the HPS philosophy encapsulates key features of IMC, an HPS approach is likely to be more effective than inconsistent or uncoordinated approaches to school-based health promotions. This finding, therefore, provides support for the HPS initiative as one which can effectively promote health and achieve positive health outcomes among school communities.

7.5. Summary

In this research, school-based health promotions were considered from a marketing perspective, using a unique blended models framework combining Integrated Marketing Communications (IMC) principles and behavioural theory to explore communication among schools and their communities. Four themes which impact upon health promotions were discovered. In this chapter, the first three themes were critically discussed. Theme A showed government policy (through requirements of the curriculum) and a school's perceived priority community health issues were the underlying factors impacting upon what health messages are promoted in schools, and why. Theme B showed stakeholder roles and relationships are an important facet of communication, impacting upon when and where health is promoted to children and by whom. Theme C highlights the importance of how health is promoted, offering insights regarding the extent to which health concepts are integrated into school life.

Through the discussion of Themes A, B and C, this research highlights a new application for IMC principles, showing IMC offers a coordinated approach to communication which could benefit stakeholders in school-based health promotions. Indeed, Theme C showed the Health Promoting Schools (HPS) initiative demonstrates characteristics much like the principles of IMC, which confirms IMC is relevant in facilitating health promotions and can be an effective tool to do so.

There are, however, a wide range of factors within environments external to the school which may impact upon health promotions. These factors, categorised as noise, skills and abilities, and environmental conditions, form Theme D. Theme D, Environmental Contexts, is thus presented in the following chapter and is concerned with factors which may enhance or inhibit communication processes within school-based health promotions.

CHAPTER EIGHT
ENVIRONMENTAL CONTEXTS OF SCHOOL-BASED HEALTH PROMOTIONS

8.1. Chapter Overview

In this research, four themes were identified when data were analysed using the study's blended models conceptual framework. Themes A, B and C were the focus of Chapter Seven, pertaining to the juxtaposition of government policy and community priorities, stakeholder roles and relationships, and health promotion approaches respectively. The purpose of this chapter is to present Theme D.

Theme D addresses the second objective of this study. The objective was to identify factors which may enhance or inhibit communication processes within school-based health promotions. This is important because such factors may impact upon implementation of promotions, specifically children's exposure to promotions and outcomes of promotions. As discussed in Chapter Five (section 5.5, p. 92), processes within communication, including behavioural outcomes, take place in different *environmental contexts.* Within those contexts, a person's skills and abilities, communication noise, and environmental conditions can *enhance* or *inhibit* communication processes. The primary environments for communication processes within school-based health promotions are *school* and *home.* Communication and behaviours are, however, also influenced by factors in the wider *media, retail* and *physical* environments.

As summarised in Figure 8.1 (p. 158) key factors in the *school* environment are drivers or leaders, peer pressure, safety issues and incentives. Lifestyles and life skills are important in the *home* environment. The *media* environment includes advertising and television programming, while the cost, availability and accessibility of food are a function of the *retail* environment. Finally, the *physical* environment refers to contextual features of neighbourhoods which may impact upon nutrition and physical activity behaviours. In this chapter, each environment is discussed using case evidence and linked to literature. Implications for theory, practice and future research are also considered.

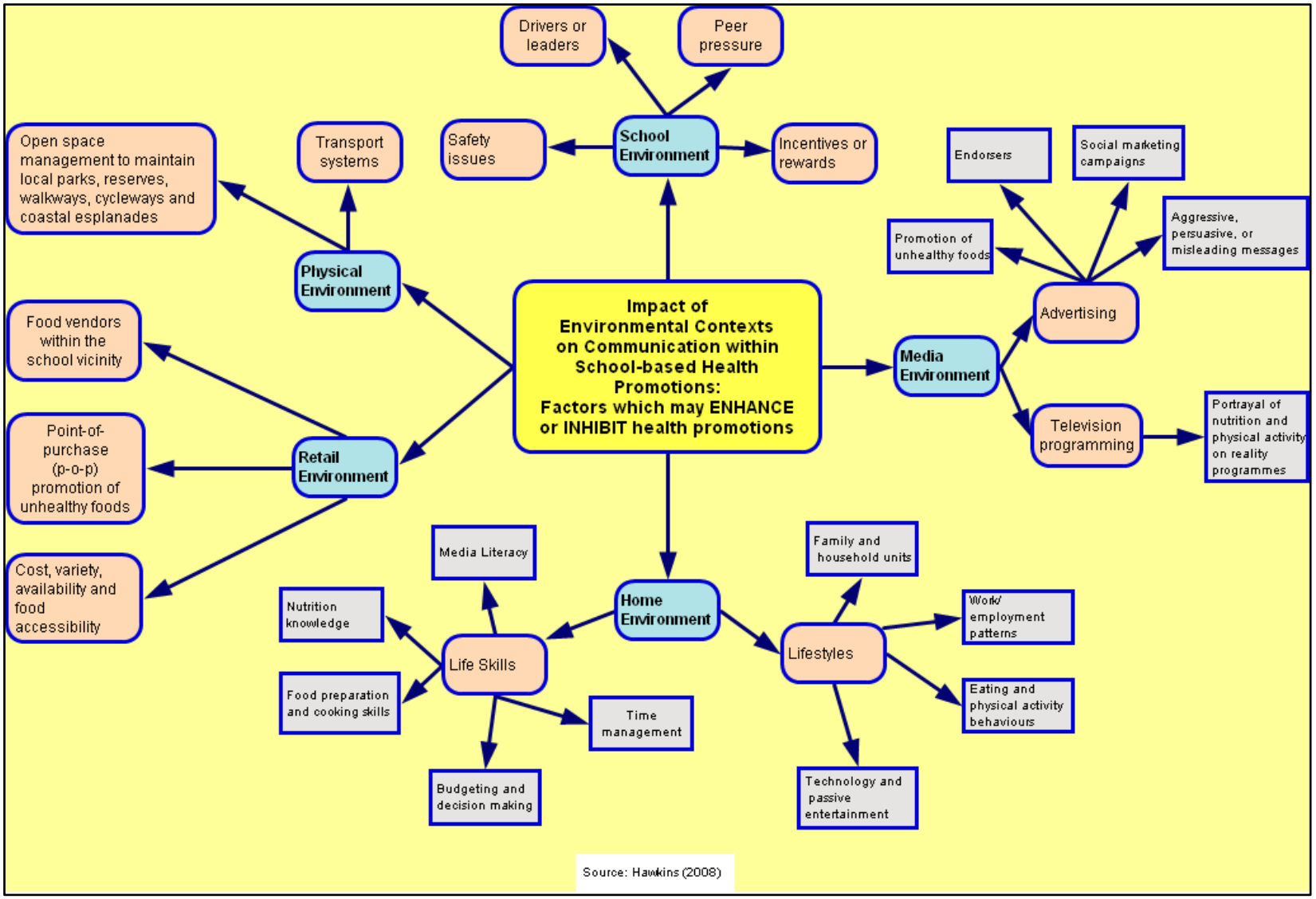


Figure 8.1. Key Findings Contributing to Theme D: Environmental Contexts

8.2. School Environment

In the school environment, the primary site of delivery for school-based health promotions, there are numerous factors which impact upon health promotion processes and outcomes. Selection and implementation of health promotions, for example, is determined by criteria such as suitability, ease of use, value for money, timetabling factors and sustainability (as discussed briefly in Chapter Five (section 5.4, p. 91). In this section of the discussion, additional factors which may enhance or inhibit communication processes within school-based health promotions are examined, including drivers and leaders, peer pressure, incentives or rewards and safety issues.

Staff commonly identified ‗drivers' and ‗leaders', individuals who champion sports, physical activities and health programmes, as vital in health promotion. These individuals are largely school staff members, but can be HPS coordinators, health professionals and parents. Children can also take leadership roles. As the quotes below show, staff highlighted the importance of drivers and leaders in both establishing and maintaining successful health promotions.

> We do rugby at the moment because we've got a teacher in the school who's, who's very keen on rugby... when that person leaves, you know, those programmes will probably stop.
> [Scott, principal, School A]

> We started to see how there are certain personalities of children who take on leadership and take on the committee type groups and roles very well... Now, the children took it and they drove it.
> [Ray, principal, School B]

> Other schools that I know of, where there hasn't been the same senior management support, it's just petered out… because the teachers have got too much to do, they've got too much on their plate just doing curriculum. It's very hard for classroom teachers to drive [HPS] because I know how much work it's taken for me over the years.
> [Jane, principal, School E]

The principle of leaders to manage and maintain school-based health initiatives seems a likely element for successful outcomes. Yet surprisingly, searches within health promotion and education literature yielded few studies which specifically focus on leadership, or the roles of leaders in school health. Inchley, Muldoon, and Currie (2007) identify leadership and management as an important factor impacting upon the effective implementation of the HPS initiative, which is consistent with my findings from school staff. Like the principals in this study, Inchley et al. (2007) suggest input from senior management is crucial for success with the HPS initiative. Perez-Rodrigo and Aranceta (2001) present a review of school-based nutrition education and although leadership is not discussed at length, they acknowledge the importance of qualified programme staff in curriculum implementation and programme leaders to support teachers. The apparent lack of research on leadership in school-based health promotions is, perhaps, because the idea of leaders is

well-established in schools and, therefore, does not warrant investigation. Conversely, as the findings of this study suggest, leaders may be a significant factor in the success of school-based promotions. Leadership, management and other success factors are, thus, potential avenues for future research.

Peer pressure among children in the school environment is also a factor which can impact upon communication processes within school-based health promotions. Peer pressure influences both children's cognitions (e.g. attitudes) and their behaviour. Teachers provided examples of peer pressure occurring when, for instance, children consider certain sports more popular than others, become self-conscious about their bodies and their sporting abilities, or are bullied during physical activity sessions. Peer pressure can also extend to food choices, with children pressured by peers to be seen eating the latest food products on the market.

> I think a lot of girls can be intimidated with boys who tend to take over in games. Say you played softball, the girls often would hang back and be the last in the line and the bigger girls might say they don't want a turn.
> [Phillippa, teacher, School D]

> There's a fair bit of peer pressure, you know… wanting the newest, you know, whatever it is... that's come from the kids at school, they've got a new snack… Bang! The kids want it.
> [Megan, teacher, School B]

Literature investigating the influence of peers on physical activity appears largely to examine the positive effect peers may have on activity levels. Salvy et al. (2008), for example, found in the presence of peers and friends, youths engaged in higher activity intensity compared with when alone. With respect to participation in organised sport, peer influences are important and may be more available to boys than girls, thus, encouraging boys to be more active than girls (Kohl & Hobbs, 1998). Kohl and Hobbs (1998) suggest the absence of encouraging peer influences may explain the rapid decline in physical activity participation among girls as they move into adolescence. Literature searches, however, resulted in no studies which focus on peer pressure to engage in specific sports or activities, body image and involvement in physical activity, or bullying during activity sessions at school. These are important issues which may explain why children can become disinterested in physical activity. Given school-based efforts to promote regular exercise, there is, therefore, scope for research which further examines factors affecting children's involvement in physical activities at school.

The findings of this study regarding peer influences with respect to food and eating are consistent with those documented in literature. In Hesketh et al.'s (2005) study of parent and child perceptions of healthy eating and activity, parents recognised behaviours are shaped early in life and even young children are exposed to peer pressure in child play groups. In particular, Hesketh et al.

found children felt pressured to have the same foods as their peers, and in turn, parents are pressured to supply those foods. Similarly, Campbell, Crawford and Hesketh's (2007) study exploring parents' views of their children's food choices found peers to be an important influence on children's food preferences and intakes. Recognising the influence of peers on food choices and eating behaviours is clearly important for parents and teachers if they are to promote healthy eating to children. Moreover, there is potential to explore how negative peer influences may be minimised and positive peer influences maximised to better promote healthy eating.

Finally, some school staff also mentioned incentives or rewards and safety issues as having an impact on communication processes within school-based health promotions. These topics were not discussed at length, but were considered important for specific health promotions. For instance, incentives or rewards can be given to children to acknowledge positive health behaviours. House points, certificates or trophies might be awarded to teams competing in a sports day, or children who participate in initiatives such as *Jump Rope for Heart* or the *Walking School Bus*. Safety issues were raised with respect to activities such as walking or biking to school, with teachers acknowledging parents may be concerned about the safety of their children travelling on busy roads.

Overall, factors such as drivers and leaders, peer pressure, incentives or rewards and safety issues can enhance or inhibit communication processes within school-based health promotions. At school, staff endeavour to address these factors by minimising communication inhibitors (e.g. by dealing with peer pressure among children) and maximising communication enhancers (e.g. by rewarding positive behaviours). In this way, of all the environmental contexts in which children are exposed to nutrition and physical activity messages, and engage in eating and activity behaviours, the school environment is likely to have the least inhibiting and most enhancing factors impacting upon the promotion of healthy living concepts and behaviours.

8.3. Home Environment

Outside of school, children spend most of their time in the care of their parents and, therefore, factors in the home environment have the greatest likelihood of enhancing or inhibiting communication processes within school-based health promotions. More importantly, at home, children's nutrition and physical activity behaviours are heavily influenced by parents, through their provision of food and opportunities for physical activity. Additionally, parents are role models from whom children learn eating and exercise habits. In this way, it is not only the skills and abilities of children and the environmental conditions they face, but also those of parents, which can impact upon children's health behaviours. Evidence from school staff and parents indicates two key sets of factors in the home environment impact on communication processes within school-based health promotions: *life skills* and *lifestyle*. These are discussed in the following sections.

8.3.1. Life Skills

Life skills, as defined in the World Health Organization (WHO) health promotion glossary (Nutbeam, 1998, p. 360), are ―abilities for adaptive and positive behaviour, that enable individuals to deal effectively with the demands and challenges of everyday life". Nutbeam (1998) explains life skills include personal, interpersonal, cognitive and physical skills such as decision-making, problem-solving, critical and creative thinking, and relationship and communication skills. Life skills are a fundamental component of *personal skills*, the development of which is a key action area detailed in the *Ottawa Charter for Health Promotion*.[56] In my thesis, ‗life skills' refers to diet-related skills such as nutrition knowledge (e.g. reading and understanding food labels), food preparation and cooking skills, as well as wider personal skills such as budgeting, decision-making, time management and media literacy. As parents are responsible for the care of children, it is both their life skills, as well as children's own development of such skills, which is important for engaging in positive health practices.

A range of topics were discussed by teacher groups with respect to parents' food skills, including ‗food thinking', purchase behaviours and the development of children's eating habits. The term ‗food thinking' is used to encompass teachers comments on ideas about food which may influence parents and families' eating behaviours, such as perceived trends in nutrition or changes in the ways people perceive food and their eating and food practices. As illustrated by the quote below, teachers referred, for instance, to food ‗rules' they had experienced during childhood which encouraged eating (to consume everything on your plate) and/or sought to elicit desired behaviours (e.g. by making dessert contingent upon the consumption of vegetables).

> MEGAN: There are good things about back then but there were other things that weren't so beneficial.
> SHEENA: Yeah, I know that the rule of ―Eat what's on your plate"…
> SELINA: Oh, absolutely.
> SHEENA: That's like, "Oh!" and it was piled high and you ate it all and then you could [have dessert].
> [Teachers, School B]

Teachers implied food rules designed to encourage consumption are no longer best practice approaches for developing healthy eating habits among children. Instead, emphasis should be on suitable portion sizes to achieve satiety. Yet teachers perceive many families are eating both the ‗wrong' (e.g. unhealthy) food and too much of it. Furthermore, teachers indicated children, particularly at a young age, are instinctive eaters; they will eat only when hungry and only as much as needed. As they grow older, however, they learn other patterns of eating, such as habitually

[56] The *Ottawa Charter for Health Promotion* was produced as a result of the First International Conference on Health Promotion, held in Ottawa, Canada in 1986 (World Health Organization, 1986).

consuming three meals a day or eating for emotional reasons. The quote from teacher Lisa of School B illustrates these points.

> Particularly for children, they will not go on [eating] as they know when they are full and shouldn't be forced to keep, you know, eat to the end of the plate, but at the same time if you don‘t eat what's there you don‘t get [dessert].
> [Lisa, teacher, School B]

There appears relatively little published literature on the topics of ‗food thinking‘ or food rules when compared with other subject matter in nutrition research[57]. ‗Food thinking‘, that is, how people view food and what current trends influence their food choices, is not a phrase currently used in nutrition or food technology research. The notion that food and nutrition is of increasing interest to a wide range of parties is, however, documented. Insall (2002), for example, suggests interest in the nutritional aspects of the food supply is shared by academics, health professionals, government officials, consumers and the food and supplement industries alike. She notes extensive media coverage is given to food and related topics in the UK, with magazines and newspapers reporting the latest food ‗scare‘ or controversial issue, or the most recent fashionable food trend, restaurant or celebrity chef. Likewise, a special report in Australia‘s B&T advertising, marketing and media magazine (Segger, 2006) highlights a growing interest in food issues as people are increasingly aware of the relationship between food and health. Food media has grown in popularity, with increased food content in magazines and a mix of reality, celebrity and competition cooking programming on television. In New Zealand too, there appears to be considerable interest in food, with regular cooking themed television shows, news articles citing research into the health benefits of food and an increasing number of magazine publications dedicated to food.

In the business sector, Julian Mellentin‘s (2007) *10 Key Trends in Food, Nutrition and Health 2008* provides an annual review of the latest trends in food, supported by examples of brands capitalising on those trends, case studies and supermarket sales data. Trends for 2008 include fruit and ‗superfruit‘, the marketing power of ‗naturally healthy‘ and healthy snacking for the ‗me‘ generation (Mellentin, 2007). Although ‗food thinking‘ is not currently used terminology, there does appear to be considerable focus on the function of foods, food trends, and the relationship between food, nutrition and health. For this thesis, the way parents and teachers view food and nutrition (i.e. their ‗food thinking‘) is an important factor impacting upon communication processes within school-based health promotions as ultimately, parents and teachers ‗food thinking‘ influences the food messages they promote to children. More broadly, given the increased interest in nutrition and health among government officials and health professionals, for instance, with respect to diet-related diseases and obesity, food trends or ‗food thinking‘ is likely to emerge as an important field of future research.

[57] Such as the relationship between diet and health, on which there is much published work.

As with ‗food thinking', there is minimal literature pertaining to food ‗rules'. Two studies were found, one by Brink et al. (1999) and the other by Puhl and Schwartz (2003). The findings from teachers in my study are consistent with both. Puhl and Schwartz explored the link between childhood food rules and adult eating behaviours, while Brink et al. examined whether childhood eating behaviours were related to dieting status among obese and average weight adults. The Brink et al. (1999) study showed ‗clean your plate at each meal' to be the most commonly cited food rule. Likewise, Puhl and Schwartz's study showed ‗clean your plate at each meal' to be a frequent food rule, as well as ‗you must eat your vegetables at dinner' and ‗you cannot have dessert until you have finished your meal'. Furthermore, Puhl and Schwartz's study indicated rules play an important role in dietary behaviour as parents use food to reward or punish children which communicates mixed messages. While parents may promote healthy eating, rewarding good behaviour with unhealthy foods, for example, teaches children ‗bad' foods can be earned by being good. The implication of parents using certain food rules is that while school-based health promotions seek to communicate healthy eating messages, parents are potentially inhibiting communication of those messages by conditioning children towards problematic eating behaviours such as overeating, binge eating and dietary restraint.

Another issue of concern for teachers is the quantity of high-fat, high-sugar packaged foods purchased by parents for their children's school lunches. Teachers report packaged foods can be problematic, even when children also have something healthy to eat (e.g. a sandwich), because children find the packaged items more appealing. During lunch times, teachers encourage children to eat items such as sandwiches and fruit first, but note it is difficult when children are given so many packaged foods. Teacher Annabel of School D explains:

> What I've noticed is there is too much of that packet stuff in the children's lunches. They might have two or three packets of packaged stuff, plus their sandwiches plus some chippies and maybe a piece of fruit. Well, they're only little children so they're going to go for the things that are the most exciting first and they're not going to go for that sandwich. That's where we come in and say, ―Eat your sandwich first". [Annabel, teacher, School D]

As teacher Carly of School A suggests, a key consideration is the fact that children generally have little or no control over what they eat. While children may request items or influence family food purchases, ultimately, children eat the foods their parents provide for them.

> Well, I think that you can teach them all that you like, but at the end of the day it is not the children who are buying the food at home... they can only eat what their parents give them and they can say that they want this and they want that, but that doesn't necessarily mean that their parents are going to buy it... we always, every year, do something about healthy eating... and so all the children have been exposed to it right from new entrance. But, you know, they can't really control what, you know, their parents are buying.
> [Carly, teacher, School A].

According to school staff, nutrition knowledge, or lack thereof, is a key factor which impacts upon parents‘ food choices for their children. In particular, teachers raised the issue of use of nutrition labels among parents. Based on teachers observations of the items children bring to school for lunch, they suggest some parents do not read the labels, do not understand the labels, or do not know what to look for.

> I have found children that will show me something that they had in their morning tea and they will say, ―look it‘s healthy, it says fruit”. But it might be like those... roll-ups or long fruit sort of straps... they might say fruit on the label but they‘re actually quite sugary and also processed and quite expensive. So I think that‘s a bit of a trap for some people.
> [Annabel, teacher School, D]

> GREER: I read labels all the time and I think I'm not having that muesli bar, it‘s just got so much sugar and they're saying it's healthy and people are giving their children these muesli bars.
> ANGELA: And they think they're doing the right thing, though.
> GREER: They do! And they just don‘t know about, you know, reading…reading [labels].
> [Teachers, School C]

Teachers claims regarding parents‘ limited use of nutrition labels are consistent with findings of a recent review (EdComs, 2007) of literature on consumer understanding of nutrition and health claims on food. The review, prepared for the Food Standards Agency (UK), draws on research from the UK, USA, Canada, Australia, New Zealand and South Africa to suggest the main barrier to people reading food labels is time. Other barriers include lack of understanding, lack of consistency in the format of labels, and a lack of agreement over what constitutes a healthy diet. More importantly, the review suggests although use of nutrition labels does appear to be increasing over time, levels of understanding do not appear to be growing. New Zealand research (Signal et al., 2008) on perceptions of nutrition labels by Māori, Pacific and low-income shoppers reveals similar findings; lack of time to read labels, and lack of understanding and knowledge about labels, are significant barriers to using them. Additionally, Signal et al. (2008) find shopping habits play an important role, as does the relative absence of labels on the low cost foods Māori, Pacific and low-income shoppers purchase.

Parents‘ self-assessment of their nutrition knowledge, as reported in the parent survey results (Chapter Six, section 6.4.3, p. 111), might also explain the poor food choices staff observe among children at school. Of those parents who completed the questionnaire, many perceived their overall knowledge of health behaviours to be greater than their knowledge of government recommended dietary and exercise guidelines. The fact that these parents perceive they have ‗excellent‘ knowledge of health behaviours, but do not have a good understanding of Ministry of Health recommended guidelines, suggests they apply their own lay knowledge to nutrition and physical activity practices. Parents‘ lay knowledge, however, may be inaccurate, yet parents use such information to make food

choices for their children. Teachers at School D, for instance, observed children with ‗energy' drinks, beverages which can include added sugar, caffeine and/or guarana (a herbal source of caffeine). Energy drinks are generally not recommended for children (Kiwi Families, 2007), but teachers suppose parents perceive ‗energy' as ‗healthy' and, therefore, parents consider those drinks to be a good beverage choice. Moreover, teachers were concerned parents with low levels of nutrition knowledge are more likely to be confused by information in the media and influenced by what is advertised or what their children request. Advertising is seen by school staff as a powerful influence on both parents' food choices and children's food requests. These issues are discussed in greater detail within the Media Environment component of Theme D (section 8.4, p. 173).

Irrespective of the extent to which parents are knowledgeable with regard to good nutrition, principals and teachers across the schools perceived a fundamental issue for many families is budgeting. Staff referred to budgeting as ‗decision making involving money', and suggested some parents are making poor decisions. When food shopping, for example, teachers suggested parents have difficulty working within a budget and planning meals in advance.

> It's like an overall budgeting thing... with some parents it's like, "Ok, I've got this much money, so we can spend twenty dollars today" and like it's too much to comprehend going and spending a hundred and twenty dollars on groceries and then making everything. It's easier just to go, "Ok, no, this is what we've got for today, now take it".
> [Shae, teacher, School B]

> I can think of one family, when mum brings in a bag of stuff for three children that bag cost a whole lot more than one loaf of bread would of cost. And one loaf of bread and some butter and some stuff would make a lot of sandwiches. We're talking about bought food from a bakery... If you add all that up, that's come to a lot of money for one day's lunch. That money could have spread for lunch over the whole week for those kids.
> [Haley, teacher, School D]

The parent survey did not assess parents' budgeting skills, but responses relating to diet choices indicated cost is a factor, particularly for low income families. Quantitative results (as discussed in Chapter Six, section 6.4.5, p. 116) showed parents of NZ European ethnicity and those with children attending high decile schools, consider healthy food can be affordable. In contrast, qualitative responses from low decile parents show that inability to afford healthy food is an issue. Additionally, time taken to prepare food is a factor which can inhibit healthy eating. Quantitative results showed a statistically significant relationship only between parents of Māori and Pacific Islander ethnicity and perceptions people do not have time to prepare healthy food. Qualitative responses, such as the examples on the following page, showed time and cost are also factors for parents of other ethnicities and across all deciles.

> What I need I can't afford.
> [Pacific Island parent, School D]
>
> Sometimes [diet] is balanced, other times not balanced because not enough time to prepare a healthy diet. Not enough money to buy healthy food.
> [Asian parent, School E]
>
> Even though money is tight and time is tight I do the best I can with the knowledge I have.
> [NZ European parent, School A]

The interplay of financial resources and the cost of food is perhaps the most important determinant of food purchasing and consumption habits among people (Burns & Friel, 2007), and there are links between socio-economic position, nutrition and health. James, Nelson, Ralph, and Leather (1997), for instance, find the diet of lower (British) socio-economic groups consists of relatively low cost high energy foods such as meat, fats and sugars with little intake of fruit, vegetables and whole wheat bread. As this type of diet is low in essential nutrients, an improved diet has considerable potential health gains. Turrell and Kavanagh‘s (2007) Australian study of socio-economic position and diet shows educational differences in dietary knowledge are significantly related to food purchasing behaviour, and food purchasing differences by household income are related in part to food-cost concern. With respect to time and eating behaviours, Mothersbaugh, Herrmann, and Warland‘s (1993) study of perceived time pressure and recommended dietary practices shows parents perceiving higher levels of time pressure utilised recommended dietary practices to a lesser extent than those perceiving less time pressure. The authors also find higher levels of nutrition knowledge can mitigate the negative effects of time pressure on dietary behaviour.

As the literature shows, financial resources, time pressures and nutrition knowledge are linked to food purchasing and consumption behaviours. In my thesis, the differing perceptions of school staff and parents on the issue of food affordability are noteworthy. While parents consider healthy food unaffordable, principals and teachers suggest parents in fact lack budgeting skills. The distinction is important as it implies parents perceive their food choices are limited by the cost of food and their financial means, whereas school staff places the emphasis on parents‘ choices and monetary spending actions. From the perspective of school staff, providing healthy food is not about how much money a family has, but rather how the family spends that money. They argue parents could afford healthy food if they were to make sensible choices, such as setting a weekly food budget and purchasing the necessary ingredients to make meals and school lunches at home instead of purchasing takeaways and lunches. Likewise, whereas parents consider lack of time to be an issue in meal preparation, school staff suggest parents are simply disorganised, choosing the ‗easy‘ option of processed foods or takeaways. Again, school staff imply parents lack life skills, in this case, time management skills, leading to poor food choices.

Reduction in cooking and food preparation skills is another factor school staff suggest contributes to poor diets among children and families. Staff suggest there is less emphasis on cooking at school than in the past, and children seem to complete schooling without learning how to use basic ingredients. More importantly, parents are thought to be cooking fewer meals at home, so children have fewer opportunities to learn cooking skills and participate in meal preparation themselves. Interestingly, while parents were not specifically asked to comment on children's development of cooking skills in the parent survey, many recommended including cooking classes in the school curriculum.

> People just don't know how to cook anymore... people who have come through the school system and haven't had the basic skills or... [Learnt] that it's not very hard to put together a meal very quickly. So I think that is a problem.
> [Russell, principal, School F]

> I think people are losing their cooking skills and that worries me because children are not seeing adults cooking and they're not cooking alongside adults.
> [Penny, teacher, School D]

In New Zealand, public health professionals consider the loss of cooking skills among the population a contributor to poor diet. The Auckland Regional Public Health Service (ARPHS)[58], for instance, in their (2006) submission to the Health Committee inquiry into obesity and type 2 diabetes (2007), suggested easy access to fast and ready-made foods, meal portion „super-sizing', the low cost of energy-dense manufactured foods and loss of cooking skills all contributed to the increased prevalence of obesity. The relationship between cooking skills, food choices and related issues is also documented in academic literature. Caraher, Dixon, Lang, and Carr-Hill's (1999) study of the state of cooking in England, for example, indicates an emergence of uncertainty in specific cooking techniques and a lack of confidence to apply techniques and cook certain foods among the population. Stead et al. (2004) indicates the presumed lack of cooking skills among low income families is a barrier to healthy eating and explores the development of a food-skills initiative in Scotland. They suggest cooking skills are being adapted and changed in response to external factors such as time pressures, food availability and technology.

As school staff in my study suggested, inclusion of food skills in the curriculum may also positively impact on the cooking capabilities of future generations of adults. Stitt (1996) suggests without appropriate cooking education there will be greater dependence on ready-made and convenience foods, which are generally nutritionally inferior to home-cooked meals, and more expensive. He includes a review of the New Zealand food technology curriculum which mirrors the British treatment of food skills in their education system. Stitt's major criticisms of the New Zealand curriculum include the change in emphasis from domestic cooking skills to the industrial and

[58] The Service provides public health services for the three district health boards in the Auckland region (Auckland, Counties Manukau and Waitemata District Health Boards).

commercial context of food and a lack of ―real hands-on experiences in preparing food" (p.31). He argues all children should receive comprehensive food education throughout their schooling, equipping them with a good understanding of food and nutrition and enabling them to make informed diet choices.

Food preparation and cooking skills among parents and children is important to the discussion in my thesis as such skills are vital for engaging families in healthy eating. Without such food skills, families are unlikely to adopt healthy eating practices communicated through school-based health promotions. As discussed, greater emphasis on cooking in the school curriculum is one potential avenue for developing food skills among children. There is a need for parents to teach their children cooking skills, and, thus, a need for awareness avenues, such as social marketing campaigns, through which parents can learn how to do so.

In summary, the discussion of parents' and children's life skills has shown food and nutrition knowledge, budgeting, and cooking skills can enhance or inhibit communication processes within school-based health promotions by impacting upon communication outcomes e.g. children's eating behaviours. More importantly, as parents are largely responsible for preparing meals and organising physical activity for children, their skills and abilities have a significant impact on children's performance (or not) of healthy behaviours. Behavioural frameworks such as the Integrated Model of Behaviour Change (IM) (as included in my conceptual framework for this study) are generally used to explain, or understand behaviour based on variables relevant to the person performing the behaviour (Fishbein, 2000; Fishbein et al., 2003). My thesis, however, shows in order to investigate children's behaviours it is important to consider not only the factors impacting specifically on the child, but also the factors impacting on parents, as those parent factors (i.e. skills, abilities and constraints) are highly influential in determining children's behaviour. Furthermore, parents view factors which inhibit the provision of healthy food, such as time pressures and financial constraints, as beyond their control. School staff, however, perceives poor habits are due to parents' lack of life skills and argue parents are responsible for ensuring their families engage in healthy behaviours. Creating awareness of the importance of healthy behaviours and assisting parents to overcome perceived time and money barriers is, therefore, essential if school-based health promotions are to be supported in children's home environments.

8.3.2. Lifestyle

Lifestyle, as defined in the WHO health promotion glossary (Nutbeam, 1998, p. 360), is ―a way of living based on identifiable patterns of behaviour which are determined by the interplay between an individual's personal characteristics, social interactions and socio-economic and environmental living conditions". Nutbeam (1998) explains culture, income, family structure, age,

physical ability, home, and work environments will impact upon a person‘s living conditions. In my research, lifestyle factors discussed by participants included family and household units, work/employment patterns and the impact of technology on activity levels. The following discussion shows how these lifestyle factors enhance or inhibit communication processes within school-based health promotions.

Family and household structures were identified by school staff as impacting upon parents‘ and children‘s lifestyles. Teachers perceived, for example, numbers of solo parent households to be increasing. Some teachers were solo parents themselves, and reported difficulties in managing work, shared custody of children and the children‘s school and after school activities. Consequently, teachers suggested this ‗juggling‘ of numerous commitments means parents are time pressured, which can impact upon eating and physical activity practices. The dialogue below between teachers Laura and Carly of School A illustrates these sentiments.

> LAURA: We have got a lot of solo parents-
> CARLY: A lot of transient children.
> LAURA: -and a lot of transients... which alters the whole tone of things as well. There‘s nothing wrong with solo parents but… (laughs). But it does effect, it does effect what‘s happening in the home and with nutrition and convenience foods, that sort of thing. You know, the mums haven‘t got time to go home and prepare this nice healthy meal. They don‘t always have time to prepare the nice healthy lunch; they‘ll just be firing the convenience foods in.
> [Teachers, School A]

The nature of employment for parents is also perceived by school staff as a factor contributing to poor diet and exercise patterns among families. Teachers suggested, for example, that while affordability of sports fees and uniforms is one consideration for parents involving their children in physical activity, arranging transport and supervision around work schedules is also an issue. Staff identified a variety of employment scenarios, where parents are working long hours, and undertaking shift work, employed in multiple jobs or both parents in two-parent households are working. Teachers at School D also commented on employment conditions and the struggle they perceive parents face in paying housing costs. Ultimately, as the following quotes show, employment, like the structure of households and family units, impacts upon the time and financial resources available for preparing meals and engaging children in physical activity.

> I think a lot of our parents work funny hours, or do what I call ‗bitsa‘ jobs to make up a whole package. When you look at how they arrange their lives it is actually quite complicated because there are children to take care of and this and that. One partner comes home and they pretty much play tag, so I guess that family unit thing has changed quite dramatically. I imagine that some of our children are left to fend for themselves, in terms of, ―here's the food" or ―here's the five bucks, go and get your fish and chips for dinner because we're too busy" or ones coming off shift and the other is going to the next shift, so that could well be.
> [Russell, principal, School F]

> We've got a lot more very busy parents… you know, not very many parents have a stay at home, person at home at school really, most parents, mothers and fathers are working.
> [Janelle, teacher, School B]

> PENNY: I mean parents under these contracts now, they don't get superannuation, they don't get help here. They've just got a contract and they've got to work so many hours to make something out of it and they wonder why the children aren't living a healthy lifestyle. Well, the parent hasn't got time…
> HALEY: The truth is for a lot of these people they're working flat out to pay the rent _cause the rents are so dear.
> PENNY: Dearer than a mortgage.
> PHILLIPPA: And the pay is so much lower now they're on these contracts.
> NURU: There are various reasons, various.
> [Teachers, School D]

The notion of changing family units and work patterns is consistent with information presented in the (2006) New Zealand Families Commission[59] publication, *The Changing Face of New Zealand Families*. The Commission reports New Zealand has the second highest rate of single parenthood in the Organisation for Economic Co-operation and Development (OECD). Approximately a third of families with dependent children have only one parent in the household, compared with 10% in 1976. Of these parents, five out of six are mothers. The Commission also reports children today are more likely to experience a number of family arrangements and stepfamilies, blended families and children moving between households are all increasingly common. In contrast to the 1970s, single parents are now more likely to be in paid employment, with 30% working full-time and 20% part-time. The most common work pattern for two-parent families with children is for both parents to be in paid work. The Commission reports single-parent families are more likely than other families to have low incomes and low standards of living. In 2003, 15% of children in two-parent families were in poverty, compared with 43% of children in single-parent families. From this information, we can, therefore, confirm family units and work patterns of parents are factors which impact upon lifestyles, and likely inhibit achievement of healthy behaviours among families.

The increasing prevalence of electronic technology for entertainment is a further factor impacting on families' and children's lifestyles. School staff observe children are highly interested in television viewing, online media and gaming, all of which are generally sedentary activities. Furthermore, they report many children engage in these forms of entertainment in place of physical activity. When compared with their own childhoods, principals and teachers indicated they did not have televisions or computers, so physical activity was a form of entertainment as well as recreation. The comment from Principal Jane on the following page illustrates this point clearly.

[59] The Families Commission is an autonomous Crown agency established in July 2004 seeking to promote the needs and interests of all New Zealand families and whānau to government and the wider community. For details see http://www.familiescommission.govt.nz.

> I think back to a time when there was no TV, when children... children had no choice but to go outside and play… we were forced into physical activity and our current lifestyle of computers, of technology, is the big killer for kids, big killer.
> [Jane, principal, School E]

Time spent watching television and engaging in other media related activities (such as gaming, computer use and internet use) is often cited as a contributing factor to the presumed increase in sedentary leisure time behaviour and decline in physical activity in the US (French, Story, & Jeffery, 2001). In New Zealand, Sport and Recreation New Zealand (SPARC) (2007) reports approximately one third of young people (aged 5-17 years of age) are inactive (they either do no physical activity or less than 2.5 hours per week) and the proportion which are sedentary has increased significantly from 8% in 1997 to 13% in 2001. In a 2007 review of New Zealand children's media use (conducted by Jackson et al., on behalf of the Broadcasting Standards Authority), the authors report New Zealand children have relatively high rates of computer and internet access when compared with US children.

Additionally, although new media technologies are increasingly available in New Zealand homes, television viewing has not declined. Children aged 5-14 watched approximately two to two and a half hours of television per day over the period 1994 – 2006. The authors of the review found, however, conflicting evidence with respect to whether increased media use among children displaces time spent in physical activity. They offer examples from various studies to conclude claims about the demise of children's play and leisure may have been overstated. Ultimately, we know New Zealand children's activity levels are decreasing, while new media use is increasing. Given the New Zealand government's emphasis on increasing physical activity among children, further research regarding the relationship between media use and physical activity is likely to emerge.

While teachers suggested children may be less physically active as a result of computer use and television viewing, the extent to which parents value and engage in physical activity is also likely to have a significant impact on children's activity levels. Teachers suggested physical activity is simply a matter of personal choice with adults; some parents regularly exercise while others choose not to exercise at all. They noted parents who are interested in physical activity appear to instil that interest in their children. Consequently, children whose parents model physical activity are, perhaps, more likely to develop interests in physical activity and be encouraged or supported in sporting endeavours. The quote below from Principal Scott encapsulates these points.

> You know, you'll get brothers and sisters of the same family coming through that are good sports people. The parents are usually really involved, or really supportive of their kids. You know, parents involved as sports people themselves.
> [Scott, principal, School A]

The notion that children develop exercise habits from parents is again consistent with the assertion that parents play an integral role in shaping health behaviours through role modelling. As discussed within Chapter Two (section 2.3.3.1, p. 23), children tend to be more active when parents model physical activity and support participation in their chosen activities (Tinsley, 2003).

To conclude, this discussion on lifestyle shows that the way families live enhances or inhibits communication processes within school-based health promotions by impacting upon children‘s eating and exercise behaviours. Again, an important finding of this research is that behavioural frameworks, like the IM (Fishbein, 2000; Fishbein et al., 2003) (included in my conceptual framework), are most commonly used to explain or understand adult behaviour, based on variables relevant to the adults whose behaviour is being examined. To examine children‘s behaviour, however, parents‘ lifestyles, particularly family and household units and their work/employment patterns must be considered. Such factors impact significantly on children‘s lifestyles, and, therefore, children‘s health behaviours.

8.4. Media Environment

In communication models, noise refers to anything which distorts or disrupts a message, or may interfere during communication processes (Chitty et al., 2005). This section discusses nutrition and physical activity messages communicated through the media environment which are forms of noise impacting upon communication processes within school-based health promotions. Messages which conflict, or counter, healthy eating and exercise messages, constitute negative noise. Positive noise consists of messages which support or are consistent with messages communicated through school-based health promotions. From discussions with school staff and children, television was identified as the leading media vehicle which promotes food, nutrition and physical activity messages through advertising and television programming.

8.4.1. Advertising

Advertising is seen by school staff as a major source of communication regarding nutrition and physical activity. In particular, there are a multitude of nutrition messages in the form of advertisements for food and drink which are highly advertised products. For the most part, school staff consider food advertising unfavourably, as the two quotes from teachers on the following page show. Key criticisms are that advertising contains a large quantity of messages promoting unhealthy foods, messages are aggressive in nature, and advertising has considerable ‗power‘ to influence food choices.

> That‘s the power of the marketing and advertising that they do, you know they put the TV on in the afternoon and those ads just start screaming at you.
> [Haley, teacher, School D]

> Yeah, the advertising for food is a, has a huge effect on what kids eat.
> [Shelly, teacher, School B]

Parents were not specifically asked questions about the influence of advertising on their children's health behaviours, but many added comments to their questionnaire, like the one below, which conveyed similar sentiments to those of teachers above.

> The info the boys get at school is great BUT I feel strongly about the manipulation of advertising. The power of the TV advert (deliberately on at cartoon/ breakfast and kids slots) are hard to counter. The marketing is so insidious and sophisticated and basically amoral.
> [NZ European parent, School C]

Both school staff and children indicated advertising of food products can be misleading. Teachers were concerned, for example, about the high fat and sugar content of products often considered healthy choices, as highlighted by teacher Sophia:

> Muesli bars, great! ...then one day someone said "Gosh, there's a lot of sugar" and I read the back... and I thought, I personally had thought it was a good choice... and then it's just, it's just false advertising, isn't it, really?
> [Sophia, teacher, School C]

Children perceived product claims could persuade people to purchase unhealthy foods and conceded they had bought or wanted to buy advertised food products, despite realising the products were not as healthy as they appeared in advertising. The notion of misleading advertising is well illustrated by the following comment from Adine of School C:

> ADINE: I think TV is lying.
> INTERVIEWER: You think TV is lying?
> ADINE: Yeah, _cause if you watch like some ads they tell you it's good for you but when you buy it you see on the packet it's got all this fat in it.
> [Child, age 10, School, C]

Increasing incidences of obesity and related health problems has prompted policy makers to investigate factors which influence eating patterns (Hoek & Gendall, 2006). In New Zealand, the association between advertising, marketing and promotion activities, and nutrition and obesity, is intensely debated. Health groups such as Fight the Obesity Epidemic (FOE) and the Obesity Action Coalition have lobbied for banning, or severely restricting, marketing of unhealthy foods to children. Alternatively, the advertising industry, not surprisingly, have reacted strongly to such measures, citing principles of informed choice, freedom of choice and parental responsibility. A New Zealand survey of public opinions about advertising food to children (Phoenix Research, 2007) suggests parents would be in favour of advertising bans; the survey, conducted on behalf of the Peak Group[60],

[60] "The Peak Group is a group of organisations with similar public health interests and concerns about food nutrition and obesity in New Zealand. The group comprises the National Heart Foundation, the Cancer society, the Stroke Foundation, Diabetes NZ and Te Hotu Manawa Māori" (Phoenix Research, 2007, p. 3).

found 82% of parents and grandparents agree or strongly agree television advertising of unhealthy food and drink products specifically designed to appeal to children should be stopped. 79% agree or strongly agree with stopping television advertising of unhealthy food and drink products during times when children watch television.

The presumed link between advertising and obesity is complex and it is beyond the scope of this thesis to consider the issues in detail. The effect of food promotion on children is a well-researched topic, with major reviews of the evidence as well as critiques of these reviews (see, for example, Hastings et al., 2003; Livingstone, 2004; Livingstone & Helsper, 2004; Paliwoda & Crawford, 2003; Young, 2003). The views of participating teachers and children in my study are consistent with those documented in advertising research. Harker and Harker (2006), for instance, in their examination of the role of advertising in diet and exercise in Australia and New Zealand, reviewed key studies (including those cited above) and highlighted two central tenets supported in literature. First, that television advertising has a modest effect on children‘s food choices, and second, that most television food advertising is for unhealthy products. Likewise, the US Institute of Medicine report on food marketing to children (2006) quoted in submissions to the Health Committee Inquiry into Obesity and Type 2 Diabetes in New Zealand (2007) concludes commercial advertising and marketing of foods and beverages influences the diets and health of children and youth. Furthermore, food and beverage marketing practices targeted to children and youth are out of balance with healthy diets and contribute to an environment that puts their health at risk.

The fact that advertising is reported to be an influence on food choices, in particular *poor* food choices, confirms advertising is a form of communication noise which inhibits communication processes within school-based health promotions. That is, while at school, children receive communication which promotes healthy eating and exercise, and advertising of unhealthy foods communicates messages counter to good nutrition. Furthermore, although children have knowledge of what constitutes a healthy diet, and at about 8 years of age develop media skills to critically examine advertising, even children at age 11 may not activate critical thinking skills to distinguish commercial from non-commercial content, or to recognise the persuasive intent of advertising unless explicitly cued to do so (Institute of Medicine, 2006). The messages presented in advertising, particularly those promoting foods and beverages high in fat and sugar, therefore, potentially override health promotion messages children receive at school.

A key issue regarding the media environment, according to participating teachers at high decile schools (A and B), is that marketing for foods and beverages prompts children to pester their parents for advertised products. Children‘s requests for products and purchase influence behaviour is referred to by marketers as ‗pester power‘ (McDermott, O‘Sullivan, Stead, & Hastings, 2006). As

Sheena‘s comments below illustrate, advertisements featuring cartoons or characters from children‘s programming are seen by teachers as particularly appealing to children.

> I've got a five year old and like he will see a new breakfast cereal advertised on the TV and he will automatically want it 'cause they use like a popular cartoon like Sponge Bob [Square Pants] or Bart [Simpson] or something like that…
> [Sheena, teacher, School B]

Teachers at the high decile schools acknowledged the potential influence of advertising, but as the following quote shows, concluded it is the responsibility of parents to make sensible choices and a clear and consistent response to requests is crucial.

> It‘s a huge, a huge thing… but again it comes down to, as a parent, being sensible about what you get, you know, when we go to Subway and get the Kids Pack he wants the rollup and I say, "No, you're not having the roll-up". "Why not?" "Because it‘s not good for your teeth", and I just have to keep reinforcing it. He asks me every time and every time I tell him the same story, but as a parent, I think that's what you have to keep doing, reinforcing the "you can‘t have it" and why.
> [Sheena, teacher, School B]

In contrast to responses from teachers at the high decile schools, teachers at the low decile schools (E and F) did not focus on the pestering effect of advertising *per se*, but were concerned some parents simply do not know what constitutes a healthy diet. As highlighted by Anita‘s remark below, teachers perceive such parents are, therefore, more likely to be influenced by what is advertised and what their children request.

> FATIMA: The matter is really sometimes, sometimes some of them really do not know what is the healthy food.
> ANITA: And if they don‘t know what‘s healthy, they are vulnerable to what‘s advertised aren‘t they?
> [Teachers, School E]

Staff at low decile schools also indicated advertising glorifies consumption of unhealthy foods. As Principal Russell of School F suggested, the problem is the frequency with which families are consuming, for instance, fast food, and the cost of doing so.

> I'd say the families are quite easily influenced by the media, the good time, the image that certain foods portray. It's seen as being upmarket, like KFC ads, you know. What they don't seem to realise is that you shouldn't be having this every week. Or if you're on a really low budget there are ways to make your dollar go a lot further. Maybe you buy a whole chicken for six dollars rather than one hamburger.
> [Russell, principal, School F]

Like staff at the low decile schools, teachers at the mid decile schools (C and D) also perceived parents with poor nutrition knowledge as more likely to be influenced by food messages in media, rather than messages promoted by schools, or messages children deliver home from school. As shown in the following quotes, teachers recommended information about types of food,

and the relationship between energy content and activity would be useful for parents when making food choices.

> SOPHIA: I mean the nutritional content of food is one thing and I‘ve just realised through reading about the last five years or so, that certain foods can sustain you for longer than others and I think that if people knew that kind of information, because it‘s not necessarily what you eat, it can be the amount that you eat and if you are not eating the food that's going to give you the longest distance, then that can contribute to obesity as well, cause you are eating more of the same... I mean it took me a long time to find that out, but that was just through reading and I think that if people had more information, "this will let you run so many kilometres", "this kind of food will only let you go that…", you know, that sort of, those sorts of ads, perhaps around looking at types of foods.
>
> ANGELA: And the easy stuff that's not scientific, like I know at Weight Watchers, it‘s like a potato the size of your hand and things that are easy for people, not you have to have so many grams of this and that and then it‘s too hard.
> [Teachers, School C]

Discussions within the focus groups confirmed children ask their parents for advertised food products. Yet, despite differing views across deciles from teachers regarding influences of advertising on food purchases and consumption, most children, as the quote below shows, reported their food requests are typically declined if parents consider the requested products unhealthy or too expensive.

> INTERVIEWER: Do you ever ask mum and dad for things that you see [advertised]?
> CHILDREN: Yeah, yeah.
> INTERVIEWER: And do they buy those things for you?
> REECE: Not all the time. Sometimes they are a bit too expensive or something.
> GAVIN: Sometimes they won‘t let you because they've got too much fat in it.
> [Children, aged 9-10, School C]

Results of the parent survey explain, at least in part, the influence of advertising on parents‘ food purchases for their children. Parents of high socio-economic status, for example, perceived information about healthy eating and exercise in the media is *not* difficult to understand, which suggests such information *is* difficult to understand for parents of low socio-economic status. This is borne out by results from the survey which also show parents of Māori and Pacific Island ethnicity consider information about health eating and exercise in the media to be confusing[61]. Overall, findings and results indicated parents of low socio-economic status, without good nutritional knowledge, are likely to be influenced by marketing efforts. By comparison, although parents of high socio-economic status are ‗pestered‘, they are perhaps more likely equipped with knowledge necessary to assess the nutritional value of products requested by children and act accordingly.

[61] While socio-economic status and ethnicity are not synonymous, lower decile communities typically include large proportions of Māori and Pacific Island families.

The phenomenon of pester power is well-documented in literature and McDermott, O'Sullivan, Stead, and Hastings (2006), who completed a systematic review of international evidence regarding pester power, concluded food promotion does encourage children to request food products. Furthermore, international literature shows food promotion increases children's preferences and requests for foods high in fat, salt and sugar (Institute of Medicine, 2006; McDermott et al., 2006) and results in parents purchasing unhealthy food products (McDermott et al., 2006; Turner, Kelly, & McKenna, 2006). Similarly, the New Zealand Peak Group survey (Phoenix Research, 2007) found most New Zealand parents and grandparents think the advertising of food and drink products to children influences their liking for particular products. Approximately half of the parents and grandparents surveyed indicated advertising influences their children's requests for particular products.

Pester power research by Marshall, O'Donohoe, and Kline (2007) challenges previous studies of pester power and in particular, some of the assumptions made by McDermott et al. (2006). McDermott et al. suggested, for example, pester power leads to parents making purchases against their better judgement, but Marshall et al. (2007) claimed this suggestion is problematic, given it assumes all parents have good nutritional knowledge and would prioritise healthy food in all cases. Marshall et al.'s point regarding nutritional knowledge is relevant to my research when we consider parents of low socio-economic status may lack the nutritional knowledge needed to make healthy food purchases. Then it is not a case of parents making purchases against their better judgement, but rather parents making purchases to the best of their knowledge.

Marshall et al. (2007) suggest, despite extensive research evidence, family interactions relating to food choice and consumption is not well understood. They therefore sought to examine the role of parents in mediating children's food consumption and draw on findings from an exploratory study of middle class New Zealand children's advertising experiences and snack food consumption. The study found advertisements for high fat, salt or sugar snack foods were appealing to children, but although children liked to consume those types of foods, they also consumed fruit and vegetables as snacks. Marshall et al. attribute children's consumption of healthy foods to the fact that parents regulate food consumption and act as gatekeepers at the point of purchase and in the home. Evidence from high decile teachers and children in my study show similar themes: children do request advertised products, but requests are often declined on the grounds the products are unhealthy or expensive. Given concerns from teachers at the mid and low decile schools regarding the influence of advertising on parents with poor nutritional knowledge, and results from parents which showed food messages in the media are confusing, we see that food promotion is an important element influencing family food choices which warrants further investigation.

In addition to discussing the influence of advertising on children‘s food requests and family food purchases, teachers also questioned the promotional tools used by advertisers to promote food products. In particular, teachers were critical of the use of high-performance athletes to endorse fast food brands, making reference to New Zealand Olympic cyclist Sarah Ulmer who featured in McDonalds‘ promotions. Although Sarah endorsed McDonald‘s healthy choices menu, as the following quote shows, teachers argued parents are unlikely to take their children to McDonald‘s to eat that range of products.

> You take McDonald‘s though; they are very crafty, aren‘t they? You know, you get Sarah Ulmer promoting the good stuff, but why are you taking your kids to McDonald‘s? It's certainly not to buy oranges, apples and water is it?
> [Selina, teacher, School B]

Sponsorship and celebrity endorsements in advertising were not topics specifically addressed in the parent survey, but as the comment below suggests, parents, too, are concerned at the mixed or misleading messages communicated by associating sports or prominent sports people with fast food brands.

> Sports sponsorship should set better standards - e.g. United Soccer gives every boy 'Player of the Day' a free MacDonalds [sic] burger. MacDonalds [sic] is the major sponsor - so what mixed messages are we actually giving kids here? ie Fast Food chains should not be allowed to sponsor sport.
> [NZ European parent, School C]

Sponsorship involves promoting the interests of a company and its brands by associating them with specific individuals or events (Chitty et al., 2005). Concerns raised by teachers and parents regarding associations between fast-food brands and athletes are consistent with assertions made by researchers regarding the contribution of marketing communications to obesity. Hoek and Gendall (2006, p. 419), for instance, assert ―the use of sporting role models by fast-food manufacturers strengthens the association between healthy activities, such as exercise, and the consumption of foods high in fat, salt and sugar”. They indicate the use of athletes in food promotions suggests the athletes endorse the brands which sponsor them, thus, reinforcing the impression those food products are not inconsistent with a healthy diet. Such food promotions, however, rarely mention whether sponsored athletes eat their sponsors‘ products, which menu items they choose and the frequency with which they consume them (Hoek, 2005) and the difference in energy requirements of young people compared with high performance athletes (Hoek & Gendall, 2006). Associating sporting role models with fast food brands may also create the misleading impression that food high in fat, salt or sugar is consistent with peak sporting performances (Hoek & Gendall, 2006). Hoek and Gendall (2006) stress environmental changes are necessary to address obesity and foster healthier eating behaviours. They recommend exploring restrictions on fast food

promotions, as specific regulations could reduce the salience of such products and the rewards currently used to prompt or reinforce purchase.

While advertising for unhealthy products is considered to have a negative influence on nutrition practices, school staff also recognised the potential benefits of positive diet and exercise messages in advertising. In particular, staff suggested school-based health promotion messages are more effective when supported by national advertising campaigns. The *5+ A Day* fruit and vegetable message, for example, is promoted in schools and the wider media. The major drawback, however, is the level of funding available for social marketing health promotion campaigns. That is, when compared with the promotional efforts of multinational food companies, social marketing campaigns are limited in their reach and frequency of communications. Social marketing campaigns are, therefore, attempting to communicate ideas in a media environment where there are numerous competitors, ‗selling' conflicting ideas, with a greater capacity to do so.

> I think things like 5+ A Day is pretty universal... but one of the concerns in society today, is the amount of advertising of unhealthy foods that goes on. That is as successful as the, or possibly, probably, more successful, than the 5+ A Day… You know, Coke wants to sell their product, so does McDonald's, so they go to the best advertisers to do that and they target kids.
> [Brian, principal, School C]

> Oh, I mean, I know for a fact that the money put into [5+ A Day] was like two percent compared to the money that McDonald's had… they put in billions... so yeah.
> [Megan, teacher, School B]

Participating children at all six schools were also aware of advertising promoting positive health messages, namely the *5+ A Day* and *Push Play* social marketing campaigns targeted towards improving nutrition and increasing physical activity respectively. When asked about healthy eating behaviours, children's responses included key messages used in the campaigns. That is, the *5+ A Day* campaign promotes consumption of five or more serves of fruit and vegetables each day, while the *Push Play* campaign promotes 30 minutes or more of physical activity each day. As the quotes below illustrate, most children attributed their knowledge of these key messages to advertisements they had viewed on television.

> INTERVIEWER: How often should you eat fruit and veggies?
> LUKE: At least five fruit and veggies daily.
> INTERVIEWER: How do you know that?
> LUKE: 'Cause of the ads on TV that they sometimes used to have.
> [Child, age 9, School C]

INTERVIEWER: How much exercise do you think you should get in a day?
NATALIE: Probably about half an hour a day, fifteen minutes a day.
KATIE: Thirty minutes a day like Push Play.
INTERVIEWER: Where do you hear about Push Play from?
NATALIE: Ads on TV.
MARIE: TV
NATALIE: TV is the main source.
[Children, aged 10-11, School B]

Despite their awareness of *5+ A Day* and *Push Play* promotions, most children were critical of the effectiveness of the advertisements. The suggestion that people do not ‗pay attention' to information presented on television, as highlighted in Natalie's remarks below, is indicative of the perceived strength (or in this case weakness) of television advertising as a mechanism to influence health behaviours. Another common response from children, such as illustrated by Jake below, related to over exposure to advertisements, indicating ‗wear out', the process by which an advertising campaign loses its persuasive power or effectiveness due to repeated overplay of the advertisements (Appel, 1971).

INTERVIEWER: How well do you think those [Push Play] ads work at helping people exercise?
NATALIE: Not that well... ‗Cause lots of people don't really pay attention to their TV.
[Child, age 10, School B]

INTERVIEWER: Do the [5+ A Day and Push Play] ads help to encourage you to eat better and exercise?
WILL: Nah.
JAKE: Sometimes they get boring to watch over and over so you change the channel.
[Children, aged 11-12, School E]

Of the social marketing efforts to improve nutrition and increase physical activity in New Zealand, only the *Push Play* media campaign appears to have been formally evaluated. Bauman et al.'s (2003) evaluation shows the *Push Play* initiative increased awareness of physical activity and intention to be active among adults in New Zealand. Despite the campaign's impact on precursors to physical activity, sustained shifts in activity were not, however, detected, as measured by the proportion of adults achieving five days per week of moderate-intensity physical activity. The authors suggest the lack of change in physical activity levels is unsurprising as media campaigns may not influence behaviour directly or immediately and at the population level acute increases are unusual for complex behaviours. The fact that the evaluation did not find significant increases in physical activity, despite high levels of awareness, highlights the complexity of factors influencing activity behaviours and indicates media campaigns need to be combined with other elements to achieve behaviour change.

In summary, the discussion in this section shows advertising is considered by school staff, parents and children as a persuasive and potentially misleading influence on family food purchase

and consumption behaviour. Advertising can lead children to pester parents for advertised products, and for those with poor nutrition knowledge, may lead to unintentional purchases of unhealthy products. Given these findings, and the fact the findings are consistent with others in advertising research, we can see why advertising is increasingly scrutinised as a factor which contributes to the growing prevalence of obesity. As discussed, the issue of regulating advertising is intensely debated in New Zealand, with the advertising industry strongly contesting action from health groups lobbying for bans and restrictions on the marketing of unhealthy food to children.

Whether tighter controls will be enforced upon advertisers of food products in New Zealand remains to be seen. Regardless, the New Zealand government and associated agencies have increased their efforts to improve nutrition, increase physical activity and reduce obesity, including using advertising media to promote healthy eating and physical activity. Participants in my study acknowledged the positive messages communicated through both the *5+ A Day* fruit and vegetable campaign and the *Push Play* physical activity campaign. Additionally, in May 2007, a social marketing campaign entitled *Feeding our Futures* (FOF) was launched by the Health Sponsorship Council (HSC) as part of the Ministry of Health's HEHA strategy.

FOF is designed to help parents establish healthy eating practices for children and offers tips and advice consistent with the nutrition guidelines promoted in schools (Health Sponsorship Council, 2007). FOF, like campaigns such as *5 + A Day* and *Push Play*, uses television advertising and other forms of promotion to encourage healthy behaviours. In this way, FOF contributes positive health messages to the media environment. Furthermore, as the FOF messages are consistent with those promoted at school, FOF enhances communication processes within school-based health promotions by reinforcing messages delivered at school and offering parents guidance for engaging children in positive health behaviour. As the evaluation of the *Push Play* campaign has shown (Bauman et al., 2003), increases in awareness through social marketing efforts may not be sufficient to change health behaviours and other actions (such as environmental changes) may be needed.

8.4.2. Television Programming

Although school staff were largely concerned with the influence of advertising content on children's food preferences, requests and intakes, children more commonly identified television programming content as a source of messages regarding food and physical activity. Children at all six schools provided examples of programmes they had viewed and the food or activity content within those programmes. 'News' programmes were seen to feature stories regarding the benefits of consuming certain foods, or new research relating to nutrition or physical activity. Food

Television[62], a channel of programming dedicated to food, was identified by some as a source of information for recipe ideas and meal preparation.

Of all programming, children most often recalled nutrition and physical activity issues depicted in reality television shows. One such programme discussed by most children was *Honey We're Killing The Kids,* a reality television programme (aired in 2006) in which New Zealand families are given a harsh wake-up call regarding their poor eating and exercise patterns. Children recalled scenes in which families were eating takeaways or junk food regularly. Tane and Tim, children at School F, suggested these television programmes are designed to teach positive health messages and encourage parents to improve their children's eating and exercise behaviours.

> TANE: Honey we're killing the kids… It's where people are giving their kids way too much junk food.
> TIM: They use state of the art technology and show a pretty accurate picture of what they will look like at the age of forty. Some of them look really fat and obese... Then they do a photo after they have made some changes in their lives and generally they look a lot better than they did.
> [Children, aged 10-11, School F]

Children also recalled other reality television shows regarding diet and exercise such as *Fat Chance, Down Size Me!* and *The Biggest Loser.* Discussion around *The Biggest Loser*, a programme in which obese contestants compete to lose the most weight, generated differing opinions from children. Most children's comments, like the discussion from children at School C below, centred on the grotesque appearance of overweight people, indicating such imagery may act as a fear appeal by signalling the potentially detrimental outcomes of poor diet and exercise patterns.

> NADIA: There's that funny [programme], The Biggest Loser or something…
> ADINE: Yeah, The Biggest Loser.
> NADIA: Yeah, that was horrible.
> SHANNON: Yeah and all the people are like really really big and you are like, "Whoa, I don't want to be like that".
> MICHAEL: And they show you what you could be like if you don't look after yourself now and what you should do.
> [Children, aged 9-10, School C]

In contrast, one group of children at School E, comprising the oldest children in the study, did not refer to the images or content of reality health shows, but rather the likelihood one would gain back any weight lost and the fact the show is about losing weight for a cash prize.

[62] Food Television is available to all SKY digital (paid viewing) subscribers and airs cooking shows and other programmes including content relating to nutrition, ethnic food, wine and entertaining.

JOSEPH: You lose weight but then you gain it back.
INTERVIEWER: Why would you gain it back?
JOSEPH: Because you're not used to regular food anymore.
CAREEN: Like The Biggest Loser.
INTERVIEWER: What do you think about that?
JOSEPH: You win money for losing weight.
[Children, aged 12, School E]

Of participating school staff, the principal of School E was the only person to acknowledge the potential influence of reality diet and exercise programmes on children's health behaviours. As shown in the quote below, she suggested reality shows are 'dangerous' because they promote short term fixes rather than long term changes in dietary and exercise patterns.

> I think at the moment the media are doing… for the most part a very good job of, of putting it right out there that we're killing our children and that's the TV programme Killing the Children [sic]. But as I said before, I think some of those programmes can be dangerous because they're teaching about dieting, not diet. They're teaching about losing weight in a hurry, not healthy lifestyles and healthy choices…
> [Jane, principal, School E]

Most research regarding the influence of television on children's eating and exercise behaviours focuses on advertising content or the sedentary nature of television viewing. Surprisingly, although television viewing involves engagement with programme content, few studies have examined the portrayal of food, eating and activity behaviours within programmes. Studies which have examined food content in programming (Dickinson, 2000; Hawkins, 2003; Kaufman, 1980; Story & Faulkner, 1990) have focused on the 'television diet', investigating the extent to which messages about food and eating are consistent with recommended dietary practices. The findings of my study show specific kinds of television programmes, namely reality shows concerned with losing weight and improving lifestyle behaviours, influence children's perceptions of nutrition, physical activity and obesity issues.

As nutrition, physical activity and obesity are topical health issues in New Zealand we could expect television broadcasting content to continue to include health-related reality programmes. More importantly, we can see there are some key issues relating to children's understanding of the content and intended purpose of health-related reality shows (e.g. developing sustainable healthy eating and exercise habits versus losing weight quickly in a competition setting), thus impacting upon the nutrition and physical activity messages communicated to children through school-based health promotions. Reality television programmes present mixed messages to children as the conditions under which people lose weight in television programming do not reflect the reality of maintaining healthy patterns on a regular basis. Reality programmes which show images of overweight people and depict the potential adverse health outcomes of being overweight appear, however, to be contributing to children's awareness of healthy living and reinforcing the importance of positive health practices.

As research on television programme content appears largely overlooked with respect to influences on children's health behaviours, my study contributes to literature by identifying reality programmes as a source of information which shapes children's health knowledge, attitudes and behaviours and impacts upon messages communicated through school-based promotions. Future research could extend these findings by investigating how children interpret programme content featuring food, eating and activity (including other programme genres), how they apply (or not) messages in their daily lives, and the extent of influence programme content has in comparison with other message sources.

8.5. Retail Environment

The retail environment and its impacts upon communication processes within school-based health promotions are discussed in this section. In particular, factors such as the cost, variety, availability and accessibility of food influence families‘ food choices. The retail environment, therefore, majorly impacts upon the ability of parents to complete healthy eating behaviours communicated through school-based health promotions.

School staff highlighted the cost of healthy versus unhealthy food options as a major contributor to poor food choices among families. Teachers gave a range of examples to illustrate this point. They indicated when preparing children‘s lunches, packaged snack foods (e.g. muesli bars, packets of chips, biscuits) are not only cheap, but are also convenient and do not spoil (compared with fresh food options). Bulk packages of snack foods are also typically less expensive than single serve products, motivating parents to buy in greater volumes than they might have otherwise. Furthermore, while packaged foods are quick and easy, as Phillippa‘s comment below illustrates, teachers perceived healthy food options to be expensive.

> Soft drink is cheaper than milk, sugar free fruit juice is really expensive, fruit and vegetables are expensive so…
> [Phillippa, teacher, School D]

Principals‘ and teachers‘ discussions suggest while healthy eating is promoted in schools and in wider social marketing efforts, the current retail food environment in New Zealand is not conducive to encouraging healthy eating. In fact, teachers suggested *un*healthy food choices are often less expensive, readily available and more convenient than healthy choices. Likewise, the parent survey showed the cost of healthy food is an important factor affecting food purchasing behaviour, especially among low income families.

The cost of healthy eating is strongly debated in literature. Research shows the perceived cost of food is a factor influencing people‘s food purchasing and consumption behaviours, and yet other research shows consuming a healthier diet need not increase dietary costs. Turrell and

Kavanagh (2007), for instance, note a growing body of evidence which largely shows the dietary profiles of low socio-economic status groups are least consistent with recommended dietary guidelines, or healthy eating messages promulgated through health promotions. Their study shows concerns about food costs among low-income families influenced their propensity to purchase healthy food, and those in low-income households were less likely to purchase foods high in fibre and low in fat, salt and sugar. Turrell and Kavanagh suggest the fact that food cost is a concern highlights the possible discordance between people's perceived costs of food and the actual cost. They identify several studies which have shown the cost of a diet consistent with recommended guidelines to be either the same or less than traditional diets. Dresler-Hawke's (2007) study of the cost of fruit and vegetables produced similar results. She notes the main perceived barriers to consuming fruit and vegetables are cost, followed by spoilage, and sought to examine the cost of consuming fruit and vegetables consistent with recommended guidelines in New Zealand. The study found consumers could eat five portions of fresh fruit and vegetables daily for NZ$1.13 in summer and NZ$2.12 in winter, which equates to the cost of a typical chocolate bar and a typical packet of biscuits respectively.

Studies like Dresler-Hawkes' (2007) indicate the actual cost of healthy food such as fruit and vegetables could be affordable for most families, yet the perceived cost of such products is clearly a powerful influence on purchase behaviour[63]. Since the data was collected for my study (2005-2006), however, food prices in New Zealand and worldwide have increased dramatically. *The New Zealand Herald* ("Food bill up 28%," 2008) reports a _world food crisis', indicating an average trolley of food in New Zealand in 2008 cost 28.5% more than one year ago[64]. The most significant increases are in dairy products, but meat prices are expected to rise as are fruit and vegetable prices. Soaring food costs could have a major impact on food purchasing and consumption behaviours and we might expect those with food budget constraints to forgo items such as fruit and vegetables in favour of options which are perceived as better value for money. The fact the food supply is beyond the control of individuals highlights the impact external factors can have on communication processes within school-based health promotions. That is, regardless of schools' efforts to promote

[63] A further point to consider is that the cost structure of healthy versus unhealthy food maybe distorted because the seemingly higher volume of unhealthy food sales allows for a "low price/high turnover" sales strategy. By contrast the seemingly lower sales volume of healthy foods may lead to a "high price/lower turnover" sales strategy. In other words, the product pricing maybe related more to supply and demand than to the resource cost to produce the item. Or it could be that manufacturers of healthy products charge a premium for the extra benefits that their products (allegedly) provide. Another possibility is that reducing the price of healthy products may disadvantage manufacturers which are targeting people who are willing to pay higher prices. In sum, the price-quality-value relationships of product sales are complex and highly dependent on ability to pay.

[64] The costs referred to in this discussion are understandably the direct costs of food purchasing, rather than the _whole of life costs' related to healthy eating. The _whole' cost would include health care costs for obese people. Those costs are frequently borne by the state or by medical insurers and not directly by the obese people themselves. Consequently, we could expect the _true' cost of healthy eating to be less than the cost of unhealthy eating.

healthy eating, if food prices continue to increase, parents are less likely to afford healthy food and, therefore, less likely to engage in healthy eating.

As well as the availability and cost of food, school staff suggested marketing elements such as placement and promotion of foods within grocery and shopping environments influence families' food choices. Confectionery and treat foods, for example, are perceived to be prominently displayed, whereas staff, such as Principal Jane in her remarks shown below, suggested alternatively, more could be done to encourage healthy choices in supermarkets.

> I think in the purchasing lines they allow people to promote food that is very bad for people... and they could do more in supermarkets by making it more prominent about the choices to take... they could do a big promotion on the Heart Foundation tick for a starter.
> [Jane, principal, School E]

Price and availability are key influences on food choices, but promotions and placement are also recognised as features within and around retail food outlets which influence food purchase and consumption behaviour (Glanz, Sallis, Saelens, & Frank, 2005). The Center for Weight and Health (2005) identifies in-store marketing techniques such as product placement at eye level for children, unhealthy foods at check-outs (e.g. sweets, chocolate) and clubs, coupons and promotions for less healthy options aimed specifically at children as barriers to healthy eating. Although some elements of food promotion are widely researched (e.g. television advertising), studies examining food promotion used in retail outlets appear sparse. Chapman, Nicholas, Banovic, and Supramaniam (2006), for example, report their research on food promotion targeted to children in Australian supermarkets is the first study of its kind. They found almost all promotions used on food packaging within the categories examined were targeted at children. Television, movie and cartoon characters were being used by 75% of all promoted products. Furthermore, the study showed food promotions were used largely to promote unhealthy foods, with 82% of all promoted foods in the categories examined being unhealthy options and only 18% were healthier choices. The notion from school staff in my study that in-store promotions contribute to unhealthy food choices is, thus, supported by the Chapman et al. study. However, given that there are few studies which examine point of purchase promotions, there is a need for further research to assess product promotion and placement, and the influence of these elements on parents' and children's purchase behaviours.

Finally, the presence of food retailers within the vicinity of school premises is of concern to school staff. Schools have little or no control over the sale of food to students by local vendors. More importantly, the food on offer is often items which are discouraged at school (such as pies and fizzy drinks) and may be cheaper than the healthy options available through the school tuckshop. Principal Geoff of School D explains:

> Yeah, I would call it a problem because the dairy up the road is too close... and the people there want to make a living; they're not interested in us going up there to brow beat them about healthy eating. I admit we haven't tried, but I know that we'd be wasting our time... and it's too hard for them to be directing [children] to buy fruit and stuff that's healthy, it's really not their job so their physical presence is the problem. [Geoff, principal, School D]

Maher, Wilson and Signal (2005) suggest a key component of the obesity problem in New Zealand and globally is the ‗obesogenic' (obesity-promoting) environment, which facilitates physical inactivity and the over-consumption of energy dense foods. In recognition of the dearth of research on the obesogenic environment surrounding schools, they sought to examine food availability from outlets in the vicinity of secondary schools. Their study found a majority (56.3%) of the outlets in the school neighbourhoods sold food, and suggest the reason food outlets were significantly closer (on average) than non-food outlets to schools is because location near a school provides significant extra sales for those food outlets. Assuming a similar pattern for outlets near primary schools, we can see the presence of food outlets could inhibit communication processes within school-based health promotions by making unhealthy food choices more readily available to children.

Overall, the retail environment appears to inhibit communication processes within school-based health promotions as healthy food choices are considered more expensive than unhealthy alternatives, require more preparation time, and have a shorter shelf life. Coupled with a wide range of cheap, processed, packaged foods, it is unsurprising many families might choose options they perceive more affordable and convenient. Additionally, promotion of unhealthy foods, or perhaps lack of promotion of healthy foods, within the retail environment, encourages consumption of foods of low nutritional value. The presence of food retailers within the vicinity of schools is also an element of the retail environment which inhibits communication processes within school-based health promotions by making available to children food options which are inconsistent with the healthy eating messages promoted.

8.6. Physical Environment

The final environment to be discussed which impacts upon communication processes within school-based health promotions is the physical or built environment. The physical environment refers to the contextual features of neighbourhoods, namely community resources such as shopping, recreational, educational and health facilities. Infrastructure, such as efficient transport systems (e.g. convenient access to shops to buy food), and open space management to maintain local parks, reserves, walkways, cycleways and coastal esplanades (e.g. spaces for recreational activities) are also included. The physical environment was not discussed at length by school staff, but was acknowledged by some as a detrimental factor impacting on families' abilities to engage in positive

health behaviours. Road safety and the quality of walkways, for instance, are seen by teachers as a concern for parents of children who walk or cycle to school as shown in the quotes below.

> LYNN: A lot of parents don‘t want their children walking to school because they don‘t feel it‘s safe, you know. Where they have a Walking School Bus they can.
> LAURA: And biking isn‘t a particularly safe means of transport either. I have a personal experience with my son getting knocked off his bike. And he was at a compulsory stop, so, you know, it really isn‘t safe.
> [Teachers, School A]

> A Walking School Bus would not be practical on most of the routes that our kids come to school on. Even places like [Road], which is actually not far away, and [Road], don‘t have foot paths, so that‘s, the Walking School Bus tends to be practical in an urban environment, but not so much here.
> [Brian, principal, School C]

Parents were not asked specifically to provide details about their community‘s resources, but responses to questions regarding recreational facilities and children‘s outdoor play provide some insights to parents‘ perceptions of their neighbourhoods. The results of the parent survey showed high decile parents perceive it is safe for children to play outside and there are adequate sports and recreation facilities in the neighbourhood. In contrast, responses from parents living in lower decile communities showed they perceive it is not safe for children in their neighbourhoods to play outside unsupervised. As discussed in Chapter Six (section 6.4.6, p.118), perceptions of the safeness of communities may be influenced by the characteristics of the neighbourhood and may adversely impact upon people‘s use of community resources (Caitlin et al., 2003).

While we might also expect there to be fewer sports and recreation amenities in poorer communities, some school staff suggested lack of physical activity among families is not due to a lack of community resources. School F, for instance, is a low decile school, yet the principal reported there are recreational facilities in the community and parks and reserves nearby which are free to access. As noted in his comments below, he indicated some people are simply not interested or motivated to engage in physical activity, despite the resources available in their community. Open spaces appear under-utilised and he recommends greater promotion of community assets may be needed to encourage the use of local facilities.

> I am surprised that people can't think of things to do because there are so many reserves, so many walks you can do, and all for nothing. These are all in very easy access for this community... We've got [the] leisure complex down there and I don't know what it costs to swim, I think it's about five dollars. If you said to them, you've got five dollars and you can either have a hamburger or have a swim and the hamburger is over within fifteen minutes and you can stay at the pool the whole day for five dollars, that's pretty cheap entertainment. Some of the kids swim off the wharf and things like that but there are beaches not too far from here that they could get to quite easily. I think sometimes the community assets need to be pushed a bit more to get them involved, but you'll always get the ones that lap it up, but there are still some that there is no helping. I don't know what they want; there is just no appeal... I think people need to get sold sometimes on the things that are quite achievable and cost

> nothing or very little. You don't have to go to a gym to get fit... apart from the teams that train down in the reserve there is never anyone using it. I never see crowds of people kicking balls around or families with their kids. Not like I would expect, and I think it is sad because it is still what a good country and society needs and it is free! [Russell, principal, School F]

There is a widely held view that areas of high social disadvantage have poorer access to community resources. This prompted Pearce, Witten, Hiscock, and Blakely (2007) to investigate geographical access to community resources in neighbourhoods across New Zealand. The community resources examined were grouped into five broad categories: health care provision, active recreational facilities, *mārae* (Māori meeting places), food shopping facilities and educational facilities. Interestingly, the results of the study showed access to most of these community resources is clearly *better* in deprived neighbourhoods. The travel time to large supermarkets, for instance, was approximately 80% lower in the most deprived neighbourhoods, compared with the least deprived neighbourhoods. Furthermore, while studies outside New Zealand have produced varied results regarding access to community resources, Pearce et al. indicate their findings are consistent with two other New Zealand based studies which also found access to the stated community resources was better in more deprived areas.

School staff in my research indicated their neighbourhoods do not lack community resources which is consistent with the Pearce et al. (2007) study, and others like it. Parents‘ perceptions of their communities suggest safety concerns are a barrier to use of such resources. The implication of these findings is that lack of community resources may not be as significant a barrier to physical activity or healthy eating as we might expect. However, Pearce et al. acknowledge proximity to resources does not account for other barriers to using those resources, such as access to cars, transport costs and entry fees. Results of the parent survey and assertions from Pearce et al. indicate the quality of resources and the perceived safety (personal security) of neighbourhoods are also important and may vary between deprived and non-deprived neighbourhoods.

In summary, the physical environment, including community resources, infrastructure and open space management, impacts upon behavioural outcomes of communication process of school-based health promotions. School staff identified neighbourhood characteristics such as the quality of roads and footpaths as a key factor impacting upon before and after school physical activities such as walking and cycling to school. The quality of resources is also coupled with safety concerns (e.g. personal security), with parents living in lower decile communities indicating it is not safe for children in their neighbourhood to play outside unsupervised. As school staff suggested, their neighbourhoods generally have good access to community resources. Other aspects of the physical environment, like the perceived quality of resources and safety of the neighbourhood, likely have greater impact upon families‘ health behaviours, particularly families in lower decile communities. In order to achieve healthy eating and physical activity behavioural outcomes intended by school-

based health promotions, environmental changes are, therefore, likely needed to address barriers in the physical environment which are currently inhibiting the abilities of parents and children to engage in those behaviours.

8.7. Summary

This chapter presented Theme D, Environmental Contexts; the fourth theme identified using the study's unique blended models framework. The framework combines communication theory and behavioural theory to explore communication among schools and their communities. Theme D showed communication noise, parents and children's skills and abilities, and environmental conditions can significantly impact upon communication processes within the environmental contexts in which communication and related behaviours take place.

The *school*, *home*, *media*, *retail* and *physical* environments were identified as key contexts containing factors which may enhance or inhibit communication processes and health behaviours. The research shows the prevalence of inhibiting factors impacting upon attainment of healthy behaviours appears far greater than the prevalence of enhancing factors. Nevertheless, Integrated Marketing Communications (IMC) principles offer schools a coordinated, and, therefore, potentially more effective strategy for communicating school-based health promotions. Additionally, the positive impacts of school-based efforts could be maximised by environmental measures to encourage and support healthy behaviours.

PART FOUR
CONCLUSION

How Do You Conclude a Qualitative Study? You don't.
– Harry F. Wolcott (1990)

Wolcott (1990) cautions against using the term ‗conclusion' when reporting qualitative research. He suggests that researchers have a tendency to report beyond *what is* and that they use their research findings as a platform for proclaiming *what ought to be*. Essentially, Wolcott argues that when writers are presenting research it is not necessary to build to a dramatic climax. Rather, it is important to report within the boundaries of the material presented and not to detract from the power of a single case. So, while this final part of the thesis comprising Chapter Nine is entitled the Conclusion, it represents the close of the *thesis*, rather than a grand flourish of ideas regarding the *research findings*. The purpose of Part Four is, then, to review succinctly what has been done, what has been learnt and what new questions have been raised. Chapter Nine, thus, critically examines how thesis objectives have been met and reviews research contributions stemming from the study. Finally, future research directions are considered.

CHAPTER NINE
CONCLUSION

Obesity is a serious health condition which develops over time and it is only over time that the desired outcomes of efforts targeted at reducing obesity among children will become apparent. School-based health promotions designed to improve nutrition, increase physical activity and reduce obesity do, however, make a significant daily contribution to the health of children. Furthermore, this thesis shows that marketing communications principles offer an integrated approach to health promotions, which, if applied in schools, are highly likely to improve child health outcomes. Table 9.1 below summarises the goals of this thesis and indicates how, and where within the thesis, these goals were attained.

Table 9.1. Overview of Thesis Achievements

GOALS	OUTCOMES
Scholastic Objectives	• Introduced in Chapter One, amplified in Chapter Three and consolidated in Chapter Nine; objectives achieved.
Research Contributions	• Conceptual framework developed in Chapter Two, applied and revised in Chapter Five, revisited in Chapter Nine; • Distinct research procedures detailed in Chapter Three; • Communication themes introduced in Chapter Five, explored in Chapters Six, Seven and Eight, and summarised in Chapter Nine; • Contributions to communication theory and behavioural theory discussed in Chapter Nine; objectives achieved.
Future Research Directions	• Summarised in Chapter Nine.

9.1. Achievement of Thesis Objectives

This thesis critically examined school-based health promotions as a marketing communications process, and in doing so, it has sought to demonstrate that marketing theory can be applied with positive outcomes in educational settings. In the field of marketing, Integrated Marketing Communications (IMC) is a strategic approach to promotion involving the coordination of communications tools (e.g. advertising, sales promotions, event sponsorships, personal selling etc.). This approach leads businesses to achieve greater communications consistency and impact (Kitchen & De Pelsmacker, 2004). Only two studies, however, were found which used IMC principles in social marketing and neither was located within a school-based health promotion context. This research is, therefore, at this point, unique. Given this research distinctiveness, the purpose of the study was to examine the potential application of IMC theory to school-based health promotions targeted at improving nutrition, increasing physical activity and reducing obesity among children. Table 9.2 on the following page presents a summary of the thesis objectives and how these objectives have been met. These points are then discussed in detail.

Table 9.2. Achievement of Thesis Objectives

Thesis Objectives	Key Findings which Demonstrate the Achievement of Thesis Objectives
1. To explore communication processes within school-based nutrition and physical activity health promotions by analysing school stakeholders perceptions and expectations of the promotions in which they are involved.	1. Stakeholders have different perceptions and expectations of health promotions. Such differences can impact upon the selection and implementation of promotions, the manner in which children are exposed to promotions, and the intended outcomes of promotions. Stakeholders also have different perceptions and expectations of their own, and each other's roles in health promotion. Discrepancies regarding perceived roles, coupled with weak stakeholder relationships, can lead to less than optimal effectiveness in communicating promotions and achieving intended outcomes. There is a need for collaboration between schools and families to communicate health promotions more effectively.
2. To identify factors which may enhance or inhibit communication processes within school-based nutrition and physical activity health promotions.	2. Five environmental contexts were identified in which enhancing or inhibiting factors affect communication processes within school-based health promotions. These contexts are the school environment, home environment, media environment, retail environment and physical (built) environment. Key impacts in the school environment are drivers or leaders, peer pressure, safety issues and incentives. Lifestyles and life skills are important in the home environment. The media environment includes advertising and television programming, while the cost, availability and accessibility of food are a function of the retail environment. The physical environment includes contextual features of neighbourhoods which may impact upon nutrition and physical activity behaviours.
3. To explore, in a qualitative manner, communication approaches used by Health Promoting Schools (HPS) as opposed to those used by non-HPS and the impact of these approaches on health promotions.	3. HPS are distinct from non-HPS as they emphasise a holistic approach to health. Distinguishing characteristics of the HPS approach to health promotion are much like the principles of IMC. An IMC approach is considered best practice in marketing so in educational settings the HPS philosophy is likely to be more effective than non-integrated approaches to health promotion. This is an important finding which provides support for the HPS initiative as one which can effectively promote health among school communities.

The three objectives of this research have been constructively addressed in a manner which illustrates the veracity of practice validity of marketing theory for education. The first objective was to analyse stakeholder perceptions and expectations of nutrition and physical activity promotions given that their views impact upon the selection, implementation and outcomes of promotions. This research has found school staff, parents, and children have different perceptions and expectations of health promotions. Moreover, these variabilities impact upon the selection and implementation of promotions, the manner in which children are exposed to promotions, and the intended outcomes of promotions. For schools, the national curriculum framework represents a mandatory starting point for health promotion. Practically, this means the framework serves as a platform from which schools are able to devise individual curriculum interpretations tailored to address, among other things,

whatever health issues they perceive to be priorities for their school community (Theme A: The Juxtaposition of Government Policy and Community Priorities, as discussed in Chapter Seven, section 7.2, p. 129). Nevertheless, and not unexpectedly, divergence occurs between health issues which schools perceive as priorities, and those which their communities distinguish as important. These discrepancies can significantly impact upon the implementation of health promotions and reduce the likelihood that promotions will achieve the outcomes schools desire.

In addition to differing concerns regarding health priorities, the research found school staff, parents and children have different perceptions and expectations of their own, and each other's roles in health promotion. Again, discrepancies between perceived stakeholder roles can lead to less than optimal effectiveness in communicating promotions and achieving the intended nutrition and physical activity outcomes. Stakeholder relationships also contribute to this lack of shared vision regarding health priorities and the roles of schools and families in addressing them (Theme B: Stakeholder Roles and Relationships, as discussed in Chapter Seven, section 7.3, p. 140). Weak relationships between schools and their communities mean communication is often one-way, rather than reciprocal or two-way. Moreover, the reported variability between practices in the school and home environments illustrates the need for collaboration between schools and families to communicate health promotions more effectively.

The second objective was to identify factors which may enhance or inhibit communication processes within school-based nutrition and physical activity health promotions. Clearly, school-based health promotions take place at school. The aim of these promotions is, however, to achieve positive nutrition and physical activity outcomes among children (e.g. awareness and a positive image of healthy lifestyles, healthy behaviours) both at school *and* outside of school. It is important, therefore, to consider factors impacting upon communication processes (particularly communication outcomes) in the environmental contexts within which those processes occur. In this study, five environmental contexts were identified within which enhancing or inhibiting factors were found to affect communication processes of school-based health promotions. These contexts are the school environment, home environment, media environment, retail environment and physical (built) environment (Theme D: Environmental Contexts, as discussed in Chapter Eight, p. 157).

The factors within each environmental context which can impact upon communication processes within school-based health promotions are categorised as communications noise, skills and abilities, and environmental conditions (e.g. constraints). Noise refers to an interruption or interference in the communication process in the form of messages which are counter to those promoted at school. Examples of noise include parents modelling poor eating and exercise patterns to their children (home environment), food promotions for products high in fat and sugar (media environment) and in-store marketing techniques to prompt purchases of high fat and sugar products

(retail environment). Children also require skills and abilities to engage in the healthy behaviours promoted at school. Children need, for example, to develop cooking skills (in order to be able to prepare healthy meals) and motor skills (to participate in physical activities). Children, however, do not have complete autonomy over their lives. In terms of eating behaviours, for instance, parents are largely responsible for meal preparation and it is their nutrition knowledge and cooking skills which are important for ensuring children eat healthily. Finally, to perform any given behaviour, the person concerned must be free of environmental conditions which may prevent attainment of the behaviour. Again, children may face environmental conditions which impact upon their eating and exercise behaviours. Yet, they are also affected by conditions in the physical environment which face their parents such as the availability and cost of food in the retail environment and accessibility of shops, recreational facilities and transport systems. Thus the skills and ability levels of parents and the environmental conditions which they face have an equal, if not greater impact on the health behaviours of children.

The final objective of the study was to explore the communication approaches used by Health Promoting Schools (HPS) compared with those used by non-HPS and the impact of these approaches on school-based health promotions. This research found HPS are distinct from non-HPS as they emphasise a holistic approach to health, encompassing personal, physical, emotional and spiritual aspects of a child‘s well being (Theme C: Health Promotion Approach, as discussed in Chapter Seven, section 7.4, p. 151). The HPS philosophy is child-centric, encourages inclusion of the whole school community and integrates health and healthy practices into all school activities. By comparison, non-HPS approach health in a piecemeal manner which is largely driven by a desire to simply meet national curriculum requirements.

A key finding of my study is that the distinguishing characteristics of the HPS approach to health promotion are much like the principles of IMC. Both HPS and IMC aim to be customer-focused, consistent across messages using all forms of relevant contact, building relationships and affecting behaviour. This finding is important as it shows IMC is applicable in the social marketing context of school-based health promotions, and moreover, HPS are, in fact, already working within a framework much like IMC. From a marketing communications perspective, an IMC approach is considered best practice, and, thus, more effective than non-integrated approaches. By applying this logic to school-based health promotions we could then expect the HPS philosophy, which shares the same characteristics as an IMC approach, to be more effective than non-integrated approaches to school-based health promotions. I would argue that this is a significant finding because it provides support for the HPS initiative as one which can effectively promote health among school communities.

9.2. Research Contributions

Contributions stemming from a study such as this typically pertain to enriching in some way, or even extending, the underpinning conceptual framework that has been adopted in order to marshal the research. Specifically for this study, this has meant that contributions have emerged not only for communication themes, but also for communication theory and behavioural theory. Implications for marketing and the health and education sectors have also emerged and all of my contributions are summarised in Table 9.3 (below) and Table 9.4 (on the following page).

Table 9.3. Summary of Research Contributions

Research Contributions	
Conceptual Framework	Development of a theoretical framework to explore communications processes within school-based health promotions from a marketing perspective. The framework combines Integrated Marketing Communications (IMC) principles (Chitty et al., 2005) and the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein et al., 2003) to illustrate communication processes within health promotions and behavioural outcomes resulting from exposure to those promotions.
Communication Themes	Identification of four themes pertaining to communication processes within school-based health promotions. Theme A shows that government policy and community priorities impact upon which health messages are promoted and why. Theme B relates to the impact of stakeholder roles and relationships upon when and where health is promoted and by whom. Theme C demonstrates that the extent to which health is integrated into school life is an important aspect of how health is promoted. Theme D illustrates that communication processes and related behaviours, which take place within different environmental contexts, are influenced by communication noise, a person's skills and abilities, and environmental conditions.
Communications Theory	Demonstration of how the application of IMC in school-based health promotions differs from its application in business, offering insights for applications of IMC in a social marketing context. The findings, thus, also serve to inform other researchers or practitioners who are interested in applying IMC principles beyond the business context in which they are usually considered. Provision of insights surrounding the noise component of communication as it occurs in school-based health promotions. Factors which actually enhance, rather than disrupt communication were identified, therefore, broadening our understanding of the communication noise construct to include 'positive' noise influences. This is an important new contribution to theory.
Behavioural Theory	Application of the IM (Fishbein, 2000; Fishbein et al., 2003) framework to examine children's health behaviour. The research shows that performance of healthy behaviours is impacted upon, not only by a child's own skills and abilities, but also by the skills and abilities of their teachers, parents and other caregivers. Likewise, while children face environmental conditions in performing healthy behaviours, conditions impacting upon adults who are responsible for them (again, teachers, parents, caregivers), can also inhibit children from engaging in those behaviours. Establishing that the prevalence of factors which inhibit communication processes within school-based health promotions (by impacting on performance of healthy behaviours) is far greater than the prevalence of factors which enhance it. These findings show that if the purpose of school-based promotions is to improve health behaviour, then it is necessary to minimise or remove as many inhibiting environmental conditions as possible. Likewise, it is also important to take advantage of, or emphasise, any environmental conditions which may enhance performance of the desired behaviours.

Table 9.4. Implications of Research Findings

Implications of Research Findings	
Marketing	Marketing has a ubiquitous and powerful influence on the health behaviours of children and families. Social marketing efforts endeavour to promote healthy eating behaviours and regular physical activity but are competing with the combined marketing power of a myriad of food and beverage companies promoting unhealthy food products. Food companies are working together to develop healthy products, improve the nutritional content of existing products, and promote healthy lifestyles through balanced diets and regular activity. However, these actions are unlikely to be entirely altruistic. Businesses are concerned with profit maximisation and products marketed as 'healthy', for example, represent a key trend in food and nutrition (Mellentin, 2007). Advertisers may face restrictions on food advertising during children's television programming, but food advertisements air during other programming periods which children view. There are also other forms of promotion which target children, such as sponsorship links between children's sporting events and food and beverage brands. Environmental measures are needed in addition to social marketing campaigns to foster healthier lifestyle behaviours. Restrictions on food promotions and changes in the manufacture of food manifest such approaches. Ironically, it is the same marketing principles successfully used to promote consumption of unhealthy foods and beverages which are now increasingly needed to promote good nutrition, physical activity and other healthy lifestyle behaviours.
Health and Education	School-based health promotions are an effective mechanism for communicating nutrition and physical activity messages to children. Promotions could, however, be rendered more effective by using marketing principles. The performance of healthy eating and physical activity behaviours, particularly outside of school, is impacted upon by numerous factors in the home, media, retail and physical environments. Environmental measures are, thus, needed to support school and community based obesity reduction efforts. The role of parents in children's health and education is pivotal. Parents are responsible for role modelling, and, therefore, normalising, positive nutrition and physical activity behaviours so healthy eating and regular activity is established as habitual components of daily family life. Multiple influences shape eating and exercise behaviours of families, including demographic (e.g. ethnicity, education, income levels) and psychographic (lifestyle) factors (e.g. the upbringing parents themselves had, dynamics of household units, family relationships, work/life balance). From the perspective of schools, parents at least need to practice basic nutrition and health knowledge at home in order to mirror health behaviours promoted at school. Yet, the majority of school staff interviewed perceived the task of providing health education for parents to be beyond the role of schools. Social marketing offers a mechanism for health promotion targeted to parents. Social marketing campaigns can raise awareness, increase knowledge and provide information to develop 'how to' skills for healthy eating and being physically active. The competing agendas of schools, their communities and the health and education sectors are a potential factor impacting upon initiatives targeted at improving the health of young New Zealanders. Collaboration between the sectors is important but the extent to which this currently happens appears to be less than desirable. A key issue revolves around stakeholder perceptions of the 'core' business of schools and the extent to which schools should promote health.

9.2.1. Conceptual Framework

A significant contribution of this research is the development of a revised and extended theoretical framework, a synthesised scaffold, which can be used to explore communications processes within school-based health promotions from a marketing perspective. The framework combines Integrated Marketing Communications (IMC) principles (Chitty et al., 2005) and the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein et al., 2003) to illustrate communication processes within health promotions and behavioural outcomes resulting from exposure to those promotions.

The important point is that the initial (*a priori*) blended framework (Chapter Two, section 2.5, p. 40) was developed through the literature review process. The framework was then applied to the case data (as discussed in Chapter Five) in order to determine how well that framework resonated. In doing so, it was discovered that the *a priori* framework did not accurately illustrate the communication processes observed. Consequently, an *a posteriori* framework was devised and presented (Chapter Five, section 5.8, p.96). This revised framework represents an important theoretical contribution to the field of applied marketing research which could be harnessed by health educators.

A key distinction of this thesis, therefore, is the development, application and revision of a new conceptual framework. This approach can most simply be considered a *revisionist* strategy as opposed to a grounded approach to budding and nurturing fresh theory (J. J. Hansen, personal communication, February 3, 2009). Furthermore, the success of an IMC approach can be generalised to other domains of concern and/or interest. That is, the approach is not limited solely to health promotions (e.g. sun protection, dental care, anti-smoking campaigns etc.), but also has potential applicability for non-health-related promotions (e.g. financial planning, sustainable/environmentally friendly living etc.).

9.2.2. Communication Themes

A major contribution of this research is the identification of four themed areas of impact upon communication processes within school-based health promotions. Understanding these four themed domains, it is argued, has implications for practice. Theme A was concerned with the juxtaposition of government policy (in the form of the school curriculum) and community priorities. The findings indicate divergence between health issues which schools distinguish as priorities and those which their contributing communities perceive as important. As discussed, this divergence, or gap, in priorities can impact considerably upon the implementation of health promotions, thus, reducing the likelihood that promotions will achieve intended outcomes.

Theme B showed stakeholder roles and relationships had a significant impact on communication processes within school-based health promotions. School staff, parents and children each had different expectations of their own and the roles of others in health promotions. They also had different perceptions of the relationships they have with each other for working together to promote health. Weak relationships and discrepancies in perceived roles of different stakeholders can lead to less than optimal effectiveness in communicating promotions. The implication of these findings is, thus, that schools, in conjunction with the Ministries of Education and Health, could devise ways and means of strengthening their relationships and communication skills in order to improve health promotion outcomes for all.

Theme C explored communication approaches used by HPS compared with those used by non-HPS and the impact of these approaches on health promotions. A key finding was that the HPS philosophy of health promotion is much like an IMC approach in marketing communications. Given IMC is considered best practice in marketing, this study provides support for promoting the HPS initiative to schools as an integrated approach to health promotion.

Finally, Theme D pertains to the environmental context of communication processes within school-based health promotions. The research shows that communication noise, a person‘s skills and abilities, and environmental conditions impact upon communication processes and children‘s health behaviours. Factors were identified within five environmental contexts: the school environment, home environment, media environment, retail environment and physical (built) environment. An important component of Theme D was the identification of sources of *positive* noise which can *enhance* communication processes of school-based health promotions, rather than interfere with or *inhibit* them. This finding adds a new dimension to communication noise which is important because it extends our understanding of the noise construct within communication processes.

9.2.3. Communication Theory

The conceptual framework developed for this research was used to examine each stage of the communication process of school-based health promotions (as detailed in Chapter Five). Analysis revealed an IMC approach could be applied in school settings, but due to the unique school context, communication processes differ from a business setting. When businesses communicate with customers, they develop communication objectives which are transformed into messages delivered via a message channel. For schools, the process is more prescribed, as the national curriculum framework under which they operate determines the communication objectives and message channel. Schools do, however, have the flexibility to illustrate curriculum components as they see fit within the framework‘s requirements. As such, schools have input regarding specific messages and how they are communicated, but not complete autonomy over the communication

process in the way businesses do. These findings contribute to IMC theory by illustrating how the application of IMC in school-based health promotions differs from its application in business, thereby offering insights for the applications of IMC in a social marketing context.

The applicability of IMC principles in school-based health promotions is ultimately dependent on the extent to which the national curriculum framework remains flexible. IMC is a consumer-orientated and consumer-driven process which, at present, is applicable in schools as they can (and do) tailor health promotions to the needs of their students and community. Yet, during the course of this study (2004-2008), the New Zealand government made changes to the national curriculum framework, so that specific physical activity, food and nutrition guidelines are, at the time of writing this concluding chapter, now required. (This is discussed in Chapter Five, section 5.2.2, p. 83 and Chapter Seven, section 7.2.1, p. 129). The introduction of specific curriculum requirements illustrates an ‗upstream' policy change designed to promote ‗downstream' individual behaviour change[65]. Social marketing expert Goldberg (1995) argues such approaches should be used more often to address public health issues in order to change the negative or constraining social structural influences impacting upon individual behaviour. The long term impact of the ‗upstream' curriculum changes remains to be seen. Yet, clearly, the Labour government, in acknowledgement of the obesity epidemic, has determined that establishing schools as healthy environments is integral to improving nutrition and increasing physical activity among children. However as governments change so may policies.

The use of ‗upstream' approaches in social marketing versus the customer-focused, ‗downstream' approach of IMC presents an interesting issue for the simultaneous application of these marketing theories to health promotion. While social marketing experts like Goldberg (1995) advocate policy and environmental changes to address health issues, IMC emphasises working with customers and tailoring promotions to individuals. As this research has shown, curriculum changes to nutrition and physical activity requirements impact upon all schools, yet there are school communities for whom nutrition and physical activity are not priority health issues. It is not because they are unimportant topics, rather, other issues are more pressing, or simply, schools weigh all aspects of health equally, without particular emphasis on any one topic over another.

While improving nutrition and increasing physical activity among children is arguably important, and ‗upstream' social marketing approaches in the form of curriculum changes have merit, the imposition of specific requirements regarding these topics is, in fact, counter to the IMC philosophy. Health promotion in schools, like other government efforts to address public health

[65] ‗Upstream' refers to the use of social marketing to achieve environmental change (e.g. in political, social, legal and physical environments) to address the perceived root causes of social issues and problems. ‗Downstream' refers to the application of social marketing principles and practices to target individual behaviour change (Andreasen, 2006).

issues, is expert-led by health professionals and policy makers. This approach results in an internally driven process that dictates which health issues schools must address and how they do so. To adopt fully an IMC approach to health promotion, schools would need the freedom to identify and address issues deemed important by their community and these may not be those deemed important by government.

I propose, therefore, that IMC principles can and should be applied to communication processes within school-based health promotions, but clearly, it must be acknowledged that the extent to which schools are able to do so remains dependent upon the requirements of the curriculum framework. That is, as long as schools have the flexibility to tailor their promotions, IMC principles are applicable. If the curriculum became a more stringent framework, an IMC approach may not necessarily be able to be achieved. Ideally, both social marketing approaches and IMC principles are applicable. ‗Upstream' policy changes could ensure healthy behaviours are supported in the school environment, while IMC principles could be used to tailor and communicate school-based health promotions to individual children and school communities.

In addition to the impact of the curriculum framework on school-based health promotions, further distinctions of the application of IMC in the school setting are the choices made by schools concerning communications tools for promoting health; these differ from those used by businesses to promote goods and services. For businesses, advertising is a major method of communication to customers, whereas for schools, teachers are effectively using personal selling to inform, educate and persuade children to undertake positive nutrition and physical activity practices. In marketing, and in school-based health promotions, personal selling remains an effective communications tool as it involves face-to-face interaction with two-way communication and instant feedback. Furthermore, whereas personal selling is typically less cost efficient than other communications tools for businesses, schools have the unique advantage of direct and guaranteed access to their target audience. Such access allows schools to ‗sell' healthy lifestyles through the delivery of consistent messages to the same set of children (i.e. ‗customers') on a regular basis.

Schools also use other communications tools including a hybrid approach of Public Relations (PR) and advertising methods when communicating with parents. They use such strategies for mounting sales promotions (such as free fruit for children), for highlighting sponsorships and event marketing (such as shared lunches), and for informing parents about new initiatives and commercially sponsored events (e.g. *Push Play Day* and the *Weetbix Triathlon*). Finding that schools use a different combination of communications tools to promote health, when compared with businesses promoting goods and services is not surprising. Yet, examining the communications tools used in school-based health promotions from an IMC perspective enables an important contribution to be made to marketing communications theory simply by showing how an IMC

approach differs when applied in a social marketing context. In short, while this study focuses specifically on the application of IMC to nutrition and physical activity health promotions, the findings serve to inform other researchers or practitioners interested in applying IMC principles beyond the business context in which they are usually considered.

A final contribution of this research to communications theory is the provision of insights surrounding the noise component of communication as it occurs in school-based health promotions. Noise refers to an interruption in communication processes, anything which distorts or disrupts a message, or may interfere during the process (Chitty et al., 2005). Noise takes many forms: physical noise, psychological noise and semantic noise (as discussed in Chapter Five, section 5.5, p.91). Typically these disruptions or interferences have a negative impact on communication. Conversely, the findings of this study show that while there are noise factors disrupting communication, there are also positive impacts which *enhance* communication processes. Advertising is a prime example of a ‗noise' which has the capacity to impact either positively or negatively on school-based health promotions. Promotions encouraging consumption of unhealthy foods can inhibit communication processes, yet social marketing campaigns which promote positive nutrition and physical activity practices enhance communication processes within school-based health promotions. Hence, the identification of factors which actually enhance rather than disrupt communication, makes a contribution to theory by broadening our understanding of the impact of noise on communication processes. More importantly, while communicators typically seek to minimise disruptive noise, there is now scope to identify sources of ‗positive' noise, which, when intentionally harnessed, has the capacity to enhance communication processes by achieving a synergistic effect.

9.2.4. Behavioural Theory

This research contributes to behavioural theory by applying the Integrated Model of Behaviour Change (IM) (Fishbein, 2000; Fishbein et al., 2003) framework to examine children's health behaviour. According to the IM, performance of a given behaviour is a function of whether or not a person has a strong intention to perform the behaviour, the necessary skills and abilities to do so, and whether or not there are environmental constraints preventing performance of the behaviour (Fishbein, 2000). The IM has been used to predict and explain adolescent and adult health behaviours, but in this research components of the IM were used to illustrate factors impacting on children's nutrition and physical activity behaviours[66]. My findings highlight the significance of adults in influencing children's health behaviour. Performance of healthy behaviours is impacted upon not only by a child's own skills and abilities, but also their teachers, parents and other

[66] Note, although the IM can be tested empirically for a given behaviour (such as cigarette smoking or condom use, as in Fishbein and colleagues research), in this study the IM components were used to develop a conceptual framework for examining children's performance of nutrition and physical activity behaviours as a whole and, therefore, were not tested on any one specific behaviour.

caregivers‘ skills and abilities. Likewise, while children face environmental conditions in performing healthy behaviours, the conditions impacting upon the adults who are responsible for them, again, teachers, parents, caregivers, can also inhibit children from engaging in those behaviours.

At school, teachers aim to create awareness of healthy lifestyles and to establish a positive image of healthy lifestyles through positive associations and by providing opportunities for engaging in healthy behaviours. Ideally, teachers also see themselves as role models and endeavour to demonstrate positive health behaviours by eating healthily and engaging in physical activity. Children are exposed to health promotions through which they learn skills to enable them to engage in healthy eating and physical activity (e.g. meal preparation and cooking skills, physical sports skills). More importantly, at school there are few environmental conditions preventing healthy behaviours. Overall, the school environment supports and promotes healthy living and engages children in healthy eating and exercise behaviours. However, although children may have the necessary cognitive predisposition to engage in healthy behaviours outside of school (e.g. in terms of attitude, subjective norm and self-efficacy), and their own skills can enable them to do so, their eating and exercise behaviours are largely determined by parents. Furthermore, compared with the school environment, there are a greater number of conditions impacting upon parents in the environments outside of school such as the price and availability of food, access to shops, recreational facilities and transport systems. Each of these conditions may restrict or prevent performance of healthy eating and physical activity.

Finally, this research contributes to behavioural theory by highlighting the influence of factors or conditions within different environmental contexts which impact upon children‘s nutrition and physical activity behaviours. In this study, performance of healthy behaviours as a communications outcome of school-based health promotions is impacted upon by factors (i.e. a person‘s skills and abilities, communication noise and environmental conditions) within five different contexts. These include school, home, media, retail and the physical (built) environments. The school environment is the primary setting of interest as it is the site within which health promotions are delivered. The research showed, however, that environmental contexts *beyond* the primary site of communication are important when examining nutrition and physical activity behaviours among children. This is because the desired outcome of school-based health promotions is to engage children in positive health behaviours both at school *and* outside of school, so it is, therefore, necessary to consider factors or conditions impacting upon behaviour in *all* relevant environmental contexts.

Moreover, the research indicates the prevalence of factors which inhibit communication processes within school-based health promotions (by impacting on performance of healthy

behaviours) is far greater than the prevalence of factors which enhance it. These findings show that if the purpose of school-based promotions is to improve health behaviour, then it is necessary to minimise or remove as many inhibiting environmental conditions as possible. Likewise, it is also important to take advantage of, and/or emphasise, any environmental conditions which may enhance performance of the desired behaviours. Ultimately schools concentrate their efforts on promoting healthy behaviours to children but are limited in their capacity to minimise or remove barriers outside the school environment, especially those preventing the ongoing practice of healthy behaviours. In order to achieve significant changes in nutrition and physical activity behaviours at a population level, the inclusion of environmental measures in government-led health strategies such as ‗Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau' (HEHA) and *Mission-On* are needed to support school-based efforts.

9.2.5. Marketing

This research highlights the ubiquitous nature and powerful influence of marketing on the health behaviours of children and families. Commercial and social marketing efforts increasingly compete with each other. While food and beverage marketers promote products high in fat and sugar, health promoters encourage healthy eating and physical activity. People are, therefore, simultaneously exposed to conflicting ideas surrounding nutrition, physical activity and obesity. In the social marketing context of school-based health promotions, schools focus on creating awareness of a healthy lifestyle, establishing a positive image of a healthy lifestyle and engaging children in healthy behaviours. Marketing ‗noise', however, as generated and presented within the media and retail environments (such as food advertising and promotion), disrupts these communication processes.

In this study, promotion of unhealthy food and beverages was the major source of marketing communications considered counter to healthy eating promotions (as discussed in Chapter Seven, section 8.4.1, p. 173). School staff and parents were concerned at the volume of television advertisements promoting high-fat and high-sugar foods (e.g. breakfast cereals and snack foods such as muesli bars) which are targeted at children. Advertising messages were seen as aggressive, and as sending potentially misleading and powerful influences on food choices, influences which prompt children to pester their parents for advertised products. Furthermore, given the persuasive nature of advertising, participants suggested low decile families and those with poor nutrition knowledge were particularly vulnerable to messages in the media. Low decile families were, therefore, considered more likely to respond to media influences than they were to health-promoting messages communicated through the school. The use of sponsorship and celebrity endorsement to forge associations between fast-food brands and athletes was also criticised by parents and teachers. The use of athletes in food promotions suggests the athletes endorse those brands which sponsor them,

thus reinforcing the impression that those food products are consistent with a healthy diet (Hoek & Gendall, 2006).

In contrast to food promotions, social marketing efforts endeavour to promote healthy eating behaviours and regular physical activity. School staff indicated national advertising campaigns such as *5+ A Day* were important for complementing and reinforcing school-based promotions. Indeed, children demonstrated awareness of such social marketing campaigns and attributed their knowledge of key health messages to those campaigns. Social marketing campaigns promoting good nutrition and physical activity are, however, competing with the combined marketing power of a myriad of food and beverage companies promoting unhealthy food products.

A recent media release from the New Zealand Public Health Association (PHA)[67] (2008a) suggests the differential in advertising spend on healthy food and non-healthy food is causing concern. Attendees at a recent PHA conference (July 3 2008), were told the fast food industry spent $12.94 for every man, woman and child in New Zealand on television advertising compared with $1.44 per New Zealander on the television advertising of fruit and vegetables during 2007. The director of the Obesity Action Coalition told the conference an estimated $55,192,849 was spent on television advertising of fast food, $20,162,384 on advertising chocolate and $17,755,433 on advertising fizzy drinks (Public Health Association, 2008a).

The Food Industry Group (FIG)[68], however, argues that the coalition compared only two food categories (fast food and fruit and vegetables) and that food advertising spend in 2007 on free-to-air television between 'healthy' and 'not so healthy' foods was, in fact, equal. Using the Ministry of Health's food and beverage classification system[69], the dollar value spend on _sometimes' and _everyday' foods is equivalent to the spend on those classified as _occasional' foods, both approximately $28 per person. Obviously, the magnitude of food advertising spend and its impact on food consumption patterns is likely to remain hotly contested, especially given the differing agendas of the food industry compared with that of the public health sector. Regardless of whether advertising spend for healthy versus unhealthy food is comparable, the fact remains that social

[67] The PHA is a voluntary association which promotes public health and influences public policy (Public Health Association, 2008b).
[68] The New Zealand Food Industry Group (FIG) is responsible for driving the New Zealand Food Industry's Obesity Action Strategy. FIG comprises members of the New Zealand Food and Grocery Council (FGC), The Association of New Zealand Advertisers (ANZA), the Communications Agencies Association of New Zealand (CAANZ) and the Television Broadcasters Council (TBC) as well as a range of other media members (Food Industry Group, 2007).
[69] The Food and Beverage Classification System is a three-tiered system for classifying foods and beverages that are recommended for sale or provision at schools and Early Childhood Education (ECE) services. _Everyday foods' are appropriate for everyday consumption. _Sometimes foods' are for restricted provision. _Occasional foods' are not for provision and are to be limited to about ONE occasion per term (Ministry of Health, n.d).

marketing campaigns are attempting to promote healthy behaviours in media environments which are cluttered with unhealthy food and beverage marketing.

In New Zealand, the food industry continues to be scrutinised by health groups for contributing to obesity through the production, promotion and sale of unhealthy foods and beverages. The industry responded to obesity concerns with the formation of the New Zealand Food Industry Accord in 2004. The Accord aims to support and complement HEHA, the government-led health strategy targeted at increasing physical activity, improving nutrition and reducing obesity. Members of the Accord include food producers, manufacturers, distributors and retailers, food marketers and advertisers, communication agencies and media organisations. Despite criticism from health lobby groups, members of the Accord affirm their commitment to addressing obesity. For instance, in a media statement released in November 2007, the New Zealand Managing Director of McDonald‘s, Mark Hawthorne, highlighted nutrition labelling and healthy menu options as components of their response to obesity concerns. Hawthorne asserts McDonald‘s have reduced advertising spend on Happy Meals and increased advertising spend on promoting healthy options and active lifestyles. Also, now during children‘s viewing hours they only advertise food which meets the Food and Beverage Classification System for Schools criteria for everyday food.

On the surface, the actions of the Food Industry Accord are commendable. Companies are working together to develop healthy products, improve the nutritional content of existing products, and promote healthy lifestyles through balanced diets and regular activity. Critics might argue, however, that the food industry response to calls for actions to address obesity is not entirely altruistic. Businesses are concerned with profit maximisation and products marketed as ‗healthy‘, for example, are a key trend in food and nutrition (Mellentin, 2007). Improving the nutritional content of products is, therefore, a contribution to obesity-reduction efforts, but it is, perhaps, more fundamentally the changing needs of increasingly health-conscious consumers which are driving businesses. Similarly, although advertisers face restrictions on food advertising during children‘s television programming, food advertisements air during other programming periods which children also view. There are, moreover, other forms of promotion which target children such as sponsorship links between children‘s sporting events and food and beverage brands.

Addressing obesity is a key concern for government and the public health sector and as long as this remains the case, marketers and other members of the food industry in particular, will continue to face pressure to act in a manner consistent with the HEHA health strategy. Indeed, as this research indicates, environmental measures are needed to foster healthier lifestyle behaviours. Restrictions on food promotions and changes in the manufacture of food are such approaches. Regardless of the motives driving businesses, any efforts which might contribute to the reduction of obesity have some merit. Also, along with environmental measures are social marketing campaigns

designed to promote healthy behaviours. Ironically, it is the same marketing principles successfully used to promote consumption of unhealthy foods and beverages which are now increasingly needed to promote good nutrition, physical activity and other healthy lifestyle behaviours. Marketing appears, therefore, to have a ‗good versus bad'-like role in health, where social marketing efforts must compete with corporate marketers.

9.2.6. Health and Education

A key message of this thesis is that school-based health promotions are an effective mechanism for communicating nutrition and physical activity messages to children. School staff and parents reported positive outcomes for children involved in a variety of health promotions such as *Jump Jam Kidz Aerobix*, *Jump Rope for Heart* and *Push Play Day* among many others. Children demonstrated positive attitudes towards healthy behaviours, knowledge of concepts pertaining to healthy eating and physical activity, and engaged in healthy behaviours at school. This research showed, however, that communication processes within school-based health promotions could be made more effective by using marketing principles. Indeed, the HPS initiative already demonstrates characteristics synonymous with IMC principles thereby making it an effective approach to promoting health among school communities.

As the prevalence of obesity continues to grow, governments, health professionals and policy makers worldwide are implementing strategies to improve nutrition, increase physical activity and reduce obesity. In New Zealand, school-based health promotions form an integral component of HEHA and *Mission-On*, each of which are government-led strategies targeted at reducing obesity. The findings of this research do not provide a definitive answer as to whether or not school-based health promotions will result in population level reductions in obesity. None-the-less, evidence from school staff and parents indicates that school-based efforts are achieving improvements in children's eating and exercise behaviours at both individual and community levels. So, are school-based nutrition and physical activity promotions alone enough to reduce obesity? The findings of this research indicate that the answer is no.

School-based health promotions *are* effective for communicating health messages to children. Yet, the performance of healthy eating and physical activity behaviours, particularly outside of school, is impacted upon by numerous factors in the home, media, retail and physical environments. Furthermore, many of these factors or conditions inhibit (rather than enhance) the performance of healthy behaviours and are beyond the control of individuals (e.g. the often higher price of healthy food). For these reasons, environmental measures are needed to support school and community based obesity reduction efforts. Key areas to address include the availability, accessibility and affordability of healthy food, increasing marketing and promotion of healthy foods

and improving contextual features of neighbourhoods (e.g. community resources such as shopping, recreational, educational and health facilities). Additionally, social marketing efforts, like the FOF healthy eating campaign (Health Sponsorship Council, 2007), are targeting parents to help them develop skills necessary for healthy living (e.g. using nutrition labels to guide food choices, food preparation and cooking skills, as well as budgeting, time management and media literacy).

Unquestionably, the role of parents in children's health and education is pivotal. Although schools play an important role in promoting health to children, the responsibility for ensuring children lead healthy lifestyles ultimately falls to parents. The findings of this research, consistent with a recent study published by the Health Sponsorship Council (Whitfield et al., 2007), indicated parental role modelling is crucial for teaching children healthy behaviours. Yet, both studies also showed many parents promote health to children by encouraging them to engage in healthy habits (such as eating breakfast), even though the parents do not necessarily perform such behaviours themselves.

The 'do as I say' (rather than 'do as I do') approach used by parents to promote health is clearly well-intentioned, but evidence in this research indicates the approach is not well-received by children. Children identified parents as role models and perceived it important for their parents to lead by example. Additionally, children were frustrated when forced to perform healthy behaviours and did not understand why they should *have* to engage in behaviours which their parents do not perform. Consequently, although children may learn the importance of healthy living (awareness and knowledge) through the teachings of parents and school-based promotions, they are likely to form negative attitudes towards desired behaviours if parents do not model those behaviours. In turn, negative attitudes towards healthy behaviours are likely to contribute to non-performance of the behaviours. Ultimately, parents are responsible for modelling, and, therefore, normalising, positive nutrition and physical activity behaviours so healthy eating and regular activity become established as habitual components of daily family life.

The survey of parents in this research (as discussed in Chapter Six) showed time and cost were key barriers to healthy eating, as well as lack of nutrition knowledge and the confusing influence of food messages in the media. Parents stated lack of time, interest or motivation as reasons for not exercising regularly. Also, some parents may not be aware of the extent to which healthy eating and physical activity are important for good health, nor might they be alert to the extent to which their own behaviours shape the habits of their children. Additionally, as discussed in Chapter Seven (section 7.2.2, p. 134), parents may perceive health issues other than nutrition and physical activity as greater priorities, and, therefore, focus more upon those issues. Again, healthy eating and physical activity social marketing campaigns, such as FOF and *Push Play*, are important

vehicles for raising awareness of the issues, particularly among those who may not recognise that they need to improve their health behaviours.

Most likely, though, multiple influences shape eating and exercise behaviours of parents and families. These include demographic (e.g. ethnicity, education, income levels) and psychographic (lifestyle) factors (e.g. the upbringing parents themselves had, dynamics of household units, family relationships, work/life balance). Perhaps then, poor eating and exercise habits of parents are simply a response to the conditions of daily life. A parent might, for example, skip breakfast on a hurried morning, find no time for physical activity during a busy work day, or purchase unhealthy convenience food for a quick, easy meal. Alternatively, these explanations could be viewed as excuses; as convenient reasons for parents simply not fulfilling their responsibility to teach children healthy habits by their own example.

Clearly, there are parents who, for a variety of reasons, need assistance in establishing healthy eating and physical activity patterns for themselves and their children. There are issues of awareness and knowledge regarding the importance of healthy eating and physical activity for health, the influence of parents as role models and task specific ‗how to' knowledge and skills. Additionally, there are environmental conditions or constraints which impact upon parents, children and their ability to engage in healthy behaviours. Schools argue parents should promote and support healthy habits and any school-based efforts should stand to reinforce and complement patterns established in the home environment. While this research showed there are parents who not only agree with this sentiment, but also practice it, there are other parents who do not. Regardless of whether parents or schools serve as the leading health promotion authority, both have an important influence on the health behaviours of children.

From the perspective of schools, parents at least need basic nutrition and health knowledge to practice at home the health behaviours promoted at school. As this research shows, the majority of school staff interviewed perceived the task of providing health education for parents to be beyond the role of schools. Understandably, resources are needed to educate parents, and even if schools were willing and able to take on that task, there is concern parents would relinquish their responsibilities to seek information and acquire skills necessary to promote healthy behaviours at home. Simply, schools do not wish to be martyrs; they fundamentally believe parents have a responsibility to help themselves.

Yet, such views could also be considered narrow-minded given schools are integral components of their local communities. As education providers (and community members) schools ought perhaps to help parents support health education. In many ways, they are, in fact, ideally placed to do so as a certain volume of information is already communicated from school to home.

As discussed in Chapter Seven (section 7.3, p. 140), relationships then become important for achieving regular two-way communication between schools and families. Overall, reciprocal relationships could have mutually beneficial outcomes. Input from parents could help schools tailor their current communication efforts to provide (at least some of) the information needed for families to support school-based health promotions. Reinforcement of promotions at home could maximise the effectiveness of the efforts taking place at school.

Beyond developing stronger links between schools and communities for promoting healthy eating and physical activity, social marketing offers a mechanism for health promotion targeted at parents. As discussed, the *5+ A Day* fruit and vegetable campaign and *Push Play* physical activity campaign are examples of sustained social marketing efforts in New Zealand. In 2007, the Health Sponsorship Council (HSC) launched *Feeding our Futures* (FOF), a social marketing programme designed to promote messages about healthy eating as a part of the HEHA strategy (Health Sponsorship Council, 2007). These campaigns may address many of the issues outlined above regarding role modelling and promotion of healthy behaviours by parents. Campaigns *can* raise awareness, increase knowledge and provide information to develop ‗how to' skills. Social marketing campaigns such as these do not, however, alter environmental conditions impacting upon parents. Additional measures are, thus, still needed to address environmental conditions such as the availability, accessibility and affordability of healthy food.

More broadly, there are the competing agendas across schools, their communities and the health and education sectors. Initiatives such as *Mission-On,* targeted at improving the health of young New Zealanders, require collaboration between the health and education sectors. The extent to which this happens appears to be less than desirable. In this research, school staff indicated the core business of schools is focused upon achieving conventional educational outcomes. In the HPS, however, staff spoke of the ‗whole' child, identifying health status as an important influence on academic achievement. In the non-HPS, health promotion was deemed important, but was not viewed as a core function of schools. Consistent with the findings of Northfield et al.'s (1997) study of school-based health promotion in Australia, perceptions of what the core business is for the health and education sectors is clearly debatable.

In the Northfield et al. (1997) study, school stakeholders were concerned the core business of the health sector (e.g. increasing positive health behaviours, reducing negative behaviours, illness and disease) was being forced onto schools. Good health, though, is increasingly recognised as a precondition for good learning (Walsh & Murphy, 2003). From this perspective, the key reason schools should promote health is ―to enhance their core business of maximising learning outcomes for students" (St Leger, 2004). If schools approach health in this manner, issues are likely to be considered holistically, rather than through segmented issue-based health programmes. Furthermore,

St Leger (2004) identifies the HPS concept as one which does just this, providing a framework for schools to develop integrated health promotions. HPS are an excellent illustration of a joint initiative combining health and education, with positive outcomes in both regards. For these reasons, and the fact the HPS concept shares characteristics of IMC (thus, making it an integrated approach), I support efforts and initiatives geared towards increasing the number of HPS and extending the level of support and resources available to them.

9.3. Critical Review of Thesis

This research was conducted using a case study approach involving six primary schools in Auckland. Case studies were used so that rich data could be collected and explored. The findings and results discussed in this thesis represent the views and experiences of stakeholders across and within the six schools but they are not purported to necessarily represent individual schools or school stakeholders as a whole. Indeed, it was the uniqueness of each case which gave rise to important discoveries. Nevertheless, given that the information collected for each case tended to echo patterns discerned within other cases, it is likely the findings and results would hold true, at least to some extent, for schools beyond those involved in this study.

In this thesis, communication processes within school-based health promotions were examined primarily from the perspective of the school. Participating staff completed in-depth interviews so were, therefore, able to explain in detail their views on the topics discussed. By comparison, parents were surveyed using a self-completion questionnaire[70], meaning they were somewhat limited in the information they could provide. That is, parents were only able to respond to the questions asked, whereas school participants were able to clarify and justify their views during the interviews. I am, therefore, mindful that the views presented may appear to favour schools, and may apportion undue blame on parents for the misgivings of school-based health promotions and the nutrition and physical activity behaviours of children. As discussed in the following section, there is clearly scope for future research to elucidate further the issues pertinent to parents regarding school-based health promotions and children's health behaviours.

Finally, this study, while insightful, presents only a 'snap shot' of school-based health promotions, an account of what occurred across the six case schools during the period over which data were gathered. The research was conducted during a time of significant government action in the health and education sectors. In particular, government initiatives targeted improving nutrition, increasing physical activity and reducing obesity. The launch of HEHA and *Mission-On* resulted in amendments to the school curriculum requiring increased emphasis on physical activity in schools and changes to school food provision. Some of these changes took effect in schools during the

[70] A detailed critique of the parent survey as a research method is provided in Chapter Six (section 6.6, p. 126).

course of the study, while others were forthcoming at the time of data collection (as discussed in Chapter Five, section 5.2.2, p. 83 and Chapter Seven, section 7.2.1, p. 129). Additionally, there was the launch of FOF, a healthy eating social marketing campaign designed to assist parents with respect to healthy food choices and eating habits for children. These initiatives are in their early stages and, to date, there is no research which examines their effectiveness. Such evaluative research is likely to occur in the future and when it does, it will further inform those involved in health promotions targeted at improving nutrition, increasing physical activity and reducing obesity.

9.4. Future Research Directions

As noted in the previous section, this research was conducted during a period of significant development and implementation of initiatives targeted towards improving nutrition, increasing physical activity and reducing obesity. As such, there is scope for evaluative research (formative as well as summative) to be completed in order to assess the impact of recent government-led initiatives on children's health behaviours such as *Mission-On* and HEHA. The *Mission-On* information pack, for instance, indicates monitoring and evaluation components have been included in the *Mission-On* package and will address both specific initiatives and the campaign as a whole (Ministry of Education, 2007b).

Based on the findings of Theme A (i.e. the juxtaposition of government policy and community priorities), research is needed to examine *how* the agendas of schools and communities can be integrated and addressed in order to achieve mutually beneficial outcomes. Consideration of how social marketing principles and IMC principles can be applied simultaneously to implement environmental and individual level strategies is also worthy of investigation. At present, the HPS philosophy offers a framework to achieve mutually beneficial health outcomes for all concerned, and, therefore, further research investigating how priorities are identified and addressed using HPS processes is recommended.

Stakeholder roles and relationships (i.e. Theme B) could also be studied further. Key issues for investigation include clarifying roles of stakeholders in school-based health promotions and determining how a shared vision can be developed. There is also scope for examining why and how relationships are formed (or not) between and among stakeholders and determining how they can be strengthened. Identifying key characteristics of successful relationships presents an important research slant. Finally, exploring potential avenues for collaboration between schools and families is also a possibility. This is so that teaching and practices in the school and home environments become more consistent in order for all parties to learn to communicate health promotions more effectively and congruently.

As discussed, Theme C (i.e. health promotion approaches) shows that the HPS framework is ideal for integrating health concepts into daily school life. Yet, there are schools who know little about the HPS framework, how it operates, and more importantly, why it should be implemented in schools. For these reasons, research is needed to explore why schools do (or do not) buy into the HPS initiative and how the initiative can be promoted so that non-HPS schools become more receptive to implementing it. Exploring how HPS concepts are operationalised, and the level of support and resources needed versus what is available to schools during the various stages of implementation is, therefore, a matter that is worthy of investigation. Identifying critical success factors of HPS is also recommended.

Finally, there is need for further research regarding a heightening of awareness about those factors which may enhance or inhibit communication processes within school-based nutrition and physical activity health promotions. In this study, communication noise, a person‘s skills and abilities, and environmental conditions were identified within five environmental contexts: the school environment, home environment, media environment, retail environment and physical (built) environment (i.e. Theme D). Future research could focus on exploring the severity of different constraints or negative noise factors and potential means of minimising or eliminating such adverse impacts upon performance of healthy behaviours. Likewise, there is scope for examining further, factors, including positive noise, which enhance or support performance of healthy behaviours so that these can be harnessed by health promoters.

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APPENDIX A:
CODING SCHEDULE FOR TRANSCRIPTS

This appendix contains the codes and sub-codes used during analysis of interview transcripts.

DATA ANALYSIS PROCEDURES: CODING

Transcript Codes

Each transcript is allocated a code which contains the decile rating of the school, the type of school, and the participant(s) interviewed.
For instance, the transcript of the interview with the principal at the decile 10, non-Health Promoting School is allocated the following code: D10-NHPS-P.

Transcript Identification Codes

Decile Rating	Type of School	Participant
D(Number)	HPS: Health Promoting School	P: Principal T: Teachers
	NHPS: Non-Health Promoting School	C: Children

Concept Codes

There are six key sets of codes containing a number of sub-codes. These are:

- **SOURCE, RECEIVER & FEEDBACK: Lines of Health Promotion Communication (LC) & Role of Stakeholders (RS)**
- **COMMUNICATION OBJECTIVE: Nutrition & Physical Activity Health Promotion Messages (HPM)**
- **MESSAGE: Health Promotion Tools (HPT)**
- **MESSAGE CHANNEL(S): Health Promotion Processes (HPP) & Health Promotion Selection Criteria (HPSC)**
- **COMMUNICATION OUTCOMES: Nutrition & Physical Activity Health Promotion Messages (HPM)**
- **NOISE: Health Promotion Communication & Implementation (HPCI): Enhancers(E) & Inhibitors(I)**

Sub-codes, definitions and examples of these codes are detailed in the tables on the following pages.

Coding Schedule

SOURCE, RECEIVER & FEEDBACK: Lines of Health Promotion Communication (LC)

Topic	Code	Definition	Specific Examples
Non Government Organisation (NGO) or Outside Group – School	HPC-NGO2S	Health promotion communication initiated by an NGO or other group external to the school	Health promotion information sent to the school via faxes and emails, resource packs posted to the school for specific activities
School – Non Government Organisation or Outside Group	HPC-S2NGO	Health promotion communication initiated by the school to an NGO or other external group	School staff phoning an NGO to obtain information about a health promotion programme they may be interested in implementing
School – Parents	HPC-S2P	Health promotion communication initiated by the school to parents and caregivers	Newsletters informing parents of upcoming school events, individual teachers send an outline of the topics to be covered in class over the coming term
School – Children	HPC-S2C	Health promotion communication initiated by the school to children	Nutrition and physical activity education and activities in the classroom and playground, homework activities to be completed outside school hours
Parents – School	HPC-P2S	Health promotion communication initiated by parents to the school	Parents contact the school regarding current, or possible future health promotion programmes
Parents – Children	HPC-P2C	Health promotion communication initiated by parents to their children	Parents reiterating health lessons learnt at school, participating and involving children in nutrition and physical activities
Children – Parents	HPC-C2P	Health promotion communication initiated by children to their parents	Children sharing information about what they have learnt at school, involving parents in homework relating to health topics
Children – School	HPC-C2S	Health promotion communication initiated by children to school staff	Children asking questions about what they have learnt, sharing intervention experiences with school staff

SOURCE, RECEIVER & FEEDBACK: Role of Stakeholders (RS)

Topic	Code	Definition	Specific Examples
School (including the principal, teachers and other school staff)	RS-S	Any reference to the role of the school	Role of the school in educating children on academic topics vs. health and wider community issues
Parents	RS-P	Any reference to the role of parents	Role of parents in supporting health interventions; reinforcing positive health messages and behaviours at home
Public Health Nurse	RS-PHN	Any reference to the role of public health nurses (PHN‘s)	Role of public health nurses to work with schools and parents to address specific health concerns for individual children
Government	RS-G	Any reference to the role of the government	Role of the government to provide schools with funding for health interventions and programmes
Non Government Organisation (NGO), community groups or other outside parties Media	RS-NGO&O	Any reference to the role of NGO‘s, community groups or other outside parties	Role of external groups involved in health programmes in schools. E.g. Local sports clubs provide Physical Education (PE) lessons for children. (Note: Government funded groups vs. private? *Support dependent on… funding? Corporate objective?s)*

COMMUNICATION OBJECTIVE: Nutrition & Physical Activity Health Promotion Messages (HPM)

Topic	Code	Definition	Specific Examples
Awareness	HPM-A	Any message promoting awareness of nutrition and physical activity	Nutrition lessons focus on the benefits of eating fruit and vegetables, water is available in the classroom for children to drink
Image	HPM-I	Any message presenting positive nutrition and physical activity behaviours as favourable	Children are encouraged to be involved in sports to promote good sportsmanship and commitment
Behaviour	HPM-BC	Any message promoting/influencing health behaviour change	

MESSAGE: Health Promotion Tools (HPT)

Topic	Code	Definition	Specific Examples
Personal Selling	HPT-PS	Person to person communication where one individual informs, educates and persuades another with respect to nutrition and physical activity	Teachers provide nutrition and physical activity education and activities in the classroom for children
Advertising	HPT-A	Communication about nutrition and physical activity via newspapers, magazines, radio, television and other media	
Sales Promotions	HPT-SP	Activities attempting to stimulate immediate action with respect to nutrition and physical activity	Free fruit in schools
Sponsorship Marketing	HPT-SM	Promoting positive nutrition and physical activity behaviours by linking them to a particular event	
Publicity	HPT-P	Communication, usually in the form of news or editorial items, about nutrition and physical activity	
Point of Purchase Communications	HPT-POP	Displays, posters, signs and other materials about nutrition and physical activity designed to influence individuals at the point of purchase	Posters in classrooms

MESSAGE CHANNEL(S): Health Promotion Processes (HIP)

Topic	Code	Definition	Specific Examples	Notes
Curriculum Development	HPP-CD	The development of the school's health and physical education curriculum	Translation of national curriculum documents into individual school documents, selection and implementation of health programmes, interventions and initiatives	Are any interventions forced onto schools? Evidence to date suggests NO. Schools make their own choices regarding how they meet national requirements… *Satisfying requirements vs. exceeding requirements?*
Professional Development	HPP-PD	Professional development for school staff	Opportunities for teachers to learn about health resources or receive training on select topics	
Policy Implementation (Formal or Informal)	HPP-PI (+F or I)	The implementation of formal and informal nutrition and physical activity policies	Formal policies that are documented and enforced within the school, informal unwritten policies or processes undertaken within the school	
Dealing with Problem Situations	HPP-PS	Dealing with situations the school may be concerned about	Teachers identify children that often bring unhealthy lunches to school; parents are contacted and a public health nurse becomes involved	
Outcome Evaluation	HPP-OE	Monitoring or measuring health promotion outcomes and children's health behaviours	Teachers monitoring the contents of children's lunch boxes, formal assessment of children's achievement in interventions	

MESSAGE CHANNEL(S): Health Promotion Selection Criteria (HPSC)

Topic	Code	Definition	Specific Examples	Notes
Suitability	HPSC-S	Selection of a particular health promotion programme to suit the community	Schools select different health promotions for junior and senior children based on their abilities	Are any health promotions forced onto schools? Evidence to date suggests NO. Schools make their own choices to meet community needs… *Satisfying requirements vs. exceeding requirements?* What if there isn't a programme that best suits the school? Or if the programmes they would like are unaffordable? *Implementing what is available vs. what would be best?* What happens if teachers do not support a health promotion programme? Health team select programmes based on perceived likelihood of support? *Choosing what „can" be done vs. what „should" be done?*
User Friendly	HPSC-UF	Selection of a particular health promotion programme based on ease of use	Schools choose health promotions that are easy to implement for both school staff and students	
Value for Money/Quality	HPSC-VMQ	Selection of a particular health promotion programme based on cost-benefit analysis	Schools choose affordable health promotions which will provide the best value for students	

COMMUNICATION OUTCOMES: Nutrition & Physical Activity Health Promotion Messages (HPM)

Topic	Code	Definition	Specific Examples
Awareness	HPO-A	Awareness of nutrition and physical activity	
Image	HPO-I	Positive attitude towards nutrition and physical activity	
Behaviour	HPO-BC	Positive health behaviour	

NOISE: Health Promotion Communication & Implementation (HPCI): Enhancers (E) & Inhibitors (I)

Topic	Code	Definition	Specific Examples
Past Experience	CI-PE (+E or I)	Past experiences impacting on selection of interventions and programmes	Each year schools implement the programmes or interventions that had positive outcomes in the previous year
Drivers/ Leaders	CI-DL (+E or I)	Individuals or group that takes a leadership role or ―drives" an intervention	Health and PE coordinators at school promote intervention activities and resources to teachers; parents take responsibility for implementing an initiative at the school
Resources	CI-R (+E or I)	Resources needed for intervention, implementation and communication	Resources for school staff and parents include intervention information, funding and time
Community Support	CI-CS (+E or I)	Support from parents and the community for interventions and programmes	Parents support interventions by reinforcing health messages at home
Incentives	CI-I(E)	Incentives that may encourage a school to select an intervention or encourage children to participate in the intervention	Schools may choose not to implement an intervention if they feel they are being exploited, peer pressure and safety issues may result and hinder intervention implementation and communication
Commercial Exploitation	CI-CE(I)	Situations where a school feels exploited by implementing a particular intervention	Schools feel that some interventions cost too much money
Peer Pressure	CI-P(I)	Peer pressure among students that may interfere with intervention implementation and communication	Children choose not to participate in activities that are seen as unpopular by their peers
Safety	CI-S(I)	Safety issues hinder intervention implementation and communication	Children are unable to walk or ride bicycles to school because of heavy traffic

Notes:
―Our" school versus what happens at other schools… no baseline for comparison so feel that what we do is ok… frames of reference.
Indication that an integrated approach to interventions is required… what do schools perceive this to mean?
Exposure beyond school programmes… mention of media and role of media.
Children making choices… knowledge versus actions… why?

APPENDIX B:
ETHICS APPROVED RESEARCH MATERIALS

This appendix contains the information sheets, consent forms, interview schedules and parent questionnaire used in the research.

1. Information Sheet for school participants
   (principals and teachers)

2. Consent Form for adults
   (principals and teachers)

3. Interview Schedule for HPS principals and teachers

4. Interview Schedule for Non-HPS principals and teachers

5. Letter to Parents
   (regarding questionnaire and requesting consent for children)

6. Information Sheet for parents
   (regarding questionnaire and requesting consent for children)

7. Consent Form for children (i.e. parents to sign)

8. Letter to Parents
   (regarding questionnaire only)

9. Information Sheet for parents
   (regarding questionnaire only)

10. Questionnaire for parents

11. Information Sheet for children

12. Focus Group Schedule for children

13. Transcriber Confidentiality Agreement

14. Authority for Release of Tape Transcripts

[Printed on Massey University letterhead]

A study of school-based nutrition and physical activity interventions

INFORMATION SHEET

Introduction

My name is Jacinta Hawkins. I am an Assistant Lecturer at Massey University, Albany, enrolled for a Doctor of Philosophy (PhD) degree in the Department of Commerce. I would like to invite you to participate in a research project that aims to explore health communication and promotion in the school environment.

In the course of this project I will be surveying principals, teachers, children and parents at a number of primary schools in Auckland. I am interested in health promotion and communication within school-based health interventions. I am also interested in your perceptions of obesity, nutrition and physical activity issues.

The following sections of this information sheet outline the specific procedures of the project. Should you have any queries, please feel free to contact me (details are provided on the following page). Your participation in this project is deeply appreciated.

Participant Recruitment

- 10 primary schools will be selected for this study based on decile ratings (in order to provide a representative range of socio-economic status).
- This will include 5 schools that *are* involved in the Health Promoting Schools initiative and 5 schools that *are not* involved in the Health Promoting Schools initiative.
- The Principal at each school will be interviewed, along with a number of teachers. In the case of Health Promoting Schools (HPS), one HPS coordinator will be interviewed per school.
- Parents and children will also be involved in this study. Approximately 500 children and 3000 parents (an average of 50 students and 300 parents per school) will be surveyed. Parents will be asked to complete a questionnaire and children will be involved in focus groups. (Note: parental consent will be required for children to participate).

Project Procedures

- The data from this study will be used by Jacinta Hawkins in her PhD thesis and in subsequent reports and publications arising from the research.
- All audiotapes, transcripts and consent forms will be held in secure facilities (locked filing cabinets) at the end of each day‘s research activity and throughout the compilation of the data files and thesis. The researcher will hold all data under secure storage for the duration of the study. After the study has been completed, this material will be securely stored within the Department of Commerce archives. Only the researcher will have access to the material.
- A report for the participants (principals, teachers, parents / caregivers) will be made available via the schools. This report will serve as a condensed version of the thesis, highlighting key findings of the project.
- Each school will be given a unique identifier. No individual participants‘ identity will be disclosed in publication of the research. Only aggregate results will be used in reporting the study‘s findings.
-

Participant involvement

- If you decide to participate, you will be involved in an interview, lasting approximately 1 hour, which would focus on the promotion of health, nutrition and physical activity at your school.

Participant's Rights
You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study at any time prior to the completion of the interview;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded.
- I also understand that I have the right to ask for the audio tape to be turned off at any time during the interview.

Project Contacts
If you have any queries, or wish to know more about this study, please contact me or my supervisor.

My contact details are:	**My Supervisor & Head of Department is:**
Jacinta Hawkins Department of Commerce College of Business Massey University (Albany) Private Bag 102-904 North Shore Mail Centre Auckland New Zealand Phone 64 9 414 0800 ext 9277 Fax 64 9 441 8177 Email: j.hawkins@massey.ac.nz	Lawrence C. Rose, PhD FIABF Professor of Finance Head of Department of Commerce College of Business Massey University (Albany) Private Bag 102-904 North Shore Mail Centre Auckland New Zealand Phone 64 9 414 0800 Fax 64 9 441 8177 Email: l.c.rose@massey.ac.nz

Massey University Ethics Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee, ALB Application 04/087. If you have any concerns about the conduct of this research, please contact:

Associate Professor Kerry Chamberlain,
Chair, Massey University Campus Human Ethics Committee: Albany,
Phone 09 414 0800 x9078
Email humanethicsalb@massey.ac.nz

[Printed on Massey University letterhead]

A study of school-based nutrition and physical activity interventions

PARTICIPANT CONSENT FORM

This consent from will be held for a period of five (5) years

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction. I understand that I may ask further questions or withdraw from the study at any time prior to the completion of the interview.

I agree/do not agree to the interview being audio taped.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ..... **Date:** .....

Full Name - printed .....

[Printed on Massey University letterhead]

Interview Schedule

(INDICATIVE)

HPS SCHOOL PRINCIPALS AND TEACHERS

Research Question: How might communication within school-based health interventions influence intervention implementation and exposure?

Concerned with:

- How communication of intervention elements is occurring, the types of messages being transmitted & whether the messages are being received
- School stakeholders' perceptions and expectations of the nutrition and physical activity interventions they are involved in.
- Factors that may enhance or inhibit the communication process and implementation of school-based nutrition and physical activity interventions.
- Whether communication within Health Promoting Schools is more or less effective than communication within other schools and what (if any) impact this has on health interventions.

Please explain what it means to be an HPS?
Prompt for: Where this idea came from?
How you found out about it?
Purpose of an HPS?
What kind of actions take place to facilitate this?
Who do you believe are the stakeholders in an HPS?
HPS as a means to tackle obesity?
Government involvement?
How does HPS relate to HEHA?

Please explain the process of becoming an HPS?
Prompt for: Motivation to become an HPS?
When/ Consultation with who?
Expectations of the HPS concept?
Funding?
What health areas did your school identify as the most important?
How does your school address these issues?
Difficulties during implementation?
Positives during implementation?
Ongoing support?
Recommendations based on your experience?

Please explain the impact the HPS concept has had on your school?
Prompt for: How do you think it differs from other schools?
What has changed from how the school was, to how it is now?
What has the change meant for teachers, parents and children?
Has being an HPS affected teaching? If so, how?

Please explain the outcomes (to date) of being an HPS?
Prompt for: Children's attitude/behaviour change regarding diet and exercise?
Weight loss?
Is this measured?

Future direction?
Recommendations?

Other questions?

[Printed on Massey University letterhead]

Interview Schedule

(INDICATIVE)

NON-HPS SCHOOL PRINCIPALS AND TEACHERS

Research Question: How might communication within school-based health interventions influence intervention implementation and exposure?

Concerned with:

- How communication of intervention elements is occurring, the types of messages being transmitted & whether the messages are being received
- School stakeholders' perceptions and expectations of the nutrition and physical activity interventions they are involved in.
- Factors that may enhance or inhibit the communication process and implementation of school-based nutrition and physical activity interventions.
- Whether communication within Health Promoting Schools is more or less effective than communication within other schools and what (if any) impact this has on health interventions.

How are nutrition and physical activity addressed in the school curriculum?
What additional health promotion initiatives operate in your school?
Prompt for: Initiatives focusing on nutrition and physical activity?
Where this idea came from? How you found out about it?
Purpose of the initiative/ specific objectives?
What kind of actions take place to facilitate this?
Who do you believe are the stakeholders in the initiative?
Difficulties during implementation?
Positives during implementation?
Government involvement? Or dictated by Government?
Open forum for discussion/feedback?
Relation to HEHA?
As a means to tackle obesity?
Measurement/ how do you measure success?
What does success mean for your school?

Please explain the outcomes (to date) of these initiatives?
Prompt for: Children's attitudes and behaviour change regarding diet and exercise?
Weight loss?
Are these measured?
Have you heard of the HPS concept?
Prompt for: If so what is your understanding of what it means to be an HPS?
Has your school considered becoming an HPS?
Why/Why not?

Other questions?

[Printed on School"s letterhead]

Date

Dear Parents and Caregivers,

ASSISTANCE WITH MASSEY UNIVERSITY, ALBANY, RESEARCH STUDY REGARDING SCHOOL-BASED NUTRITION AND PHYSICAL ACTIVITY PROGRAMMES

In *month* this year, a Massey University researcher began a three phased research programme to explore health communication and promotion in the school environment relating to nutrition and physical activity. An information sheet regarding the project is included with this letter.

The first phase of the study involved an interview with teachers at our school. We ask for your cooperation in the second and third phase of the study. For the second phase, we would like you to fill in the attached questionnaire regarding your perceptions of obesity issues and the influence of health promotion at our school on your children‘s diet and exercise behaviours. Note that if you have more than one child at our school, you may receive multiple questionnaires. Please only complete one questionnaire and return it in the reply-paid envelope provided.

The researcher‘s third task is to conduct a series of discussions with the children regarding their views on health and their perceptions of nutrition and physical activity. We are then seeking your formal written consent for your children to participate in the third phase of the study. The researcher is sensitive regarding children‘s rights. No individual child or their parent or caregiver will be able to be identified and only aggregate results will be used in reporting the study‘s findings.

There will be no ramifications should you decline to answer the questionnaire, or should you elect that your children should not participate in the study. Alternative classroom activity will be organised by the relevant class teachers to ensure that no child will be placed in a situation of feeling inferior or in any way _left out' of activities.

Please take a moment to complete the enclosed questionnaire and return it in the reply-paid envelope provided. For your child to participate, please return the consent form to his/her teacher at school. If you are giving permission for more than one child to participate, please ensure that you list each child's name on the form. It does not matter which teacher the form is returned to. Should you have any queries or concerns, please contact me or Jacinta Hawkins at Massey University, Albany, on 414-0800, extension 9277, or email her at j.hawkins@massey.ac.nz

Thank you again for your cooperation.

Name
PRINCIPAL

[Printed on Massey University letterhead]

A study of school-based nutrition and physical activity programmes

INFORMATION SHEET

My name is Jacinta Hawkins. I am an Assistant Lecturer at Massey University, Albany, enrolled for a Doctor of Philosophy (PhD) degree in the Department of Commerce. I would like to invite you to participate in a research project that aims to explore health communication and promotion in the school environment.

In 2003, the New Zealand government launched a nationwide health strategy, called ‗Healthy Eating – Healthy Action' (HEHA). The HEHA strategy encourages school-based programmes that promote healthy eating and physical activity. The purpose of this research is to ask questions such as: *"How are these programmes being communicated to teachers, parents and children?", "How do parents and teachers feel about these programmes?", "What messages are getting across to the children?"*

In the course of this project, I will be surveying principals, teachers, children and parents at a number of primary schools in Auckland. I am interested in health promotion at your child's school and his/her diet and exercise behaviours. I am also interested in your perceptions of obesity, nutrition and physical activity issues.

I would like to invite you to complete the enclosed questionnaire. It should only take about 15 minutes to complete. The questionnaire is aimed at understanding your awareness of school-based health programmes and your attitude towards eating and exercising behaviors in children. Please return the completed questionnaire to me in the reply paid envelope.

I would also like to invite your child to participate in this study. The children at your school will be surveyed during class time and will be asked questions such as:
"What kinds of foods do you like to eat?" "What foods are good/bad for your body?"
"What kind of exercise do you like to do?" "Have you learnt about food & exercise at school?"

This will be a fun session for the children and participation is completely voluntary. Children can choose not to answer a question or they can choose to leave at any time. Children not participating in the discussion will be involved in other classroom activities. Please sign and return the enclosed consent form to your child's teacher, if you agree to have your child participate in this study.

Please rest assured all personal details will remain strictly confidential. A report of the aggregate findings of this study will be made available to the schools in early 2006. If you have any queries, or wish to know more about this study, please feel free to contact me, or one of my supervisors (details listed below).

Thank you for your participation in this study. Hopefully, we will find out if school-based health promotion programmes are achieving their goals. We will also be able to guide future programmes, with potential benefits for children's health. It is important to our country's future that the children of New Zealand are able to make healthy lifestyle decisions.

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used in any publications resulting from this study;
- be given access to a summary of the project findings when it is concluded.

If you have any queries, or wish to know more about this study, please feel free to contact me, or my supervisor.

My contact details are:	**My supervisor & Head of Department is:**
Jacinta Hawkins Department of Commerce College of Business Massey University (Albany) Private Bag 102-904 North Shore Mail Centre Auckland New Zealand Phone 64 9 414 0800 ext 9277 Fax 64 9 441 8177 Email: j.hawkins@massey.ac.nz	Lawrence C. Rose, PhD FIABF Professor of Finance Head of Department of Commerce College of Business Massey University (Albany) Private Bag 102-904 North Shore Mail Centre Auckland New Zealand Phone 64 9 414 0800 Fax 64 9 441 8177 Email: l.c.rose@massey.ac.nz

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[Printed on Massey University letterhead]

A study of school-based nutrition and physical activity programmes

PARTICIPANT CONSENT FORM

This consent from will be held for a period of five (5) years

I have read the Information Sheet and understand the purpose of this research.

I understand that I may ask questions at any time.

I agree/do not agree to the focus group being audio taped.

This confirms that I am prepared to let my children participate in the above study.

Signature: ..... **Date:** .....

Full Name - printed .....

Name and Room number of children for whom consent is given (please list):

_____

_____

_____

[Printed on School"s letterhead]

Date

Dear Parents and Caregivers,

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Please take a moment to complete the enclosed questionnaire and return it in the reply-paid envelope provided. Should you have any queries or concerns, please contact me, or Jacinta Hawkins at Massey University, Albany, on 414-0800, extension 9277, or email her at j.hawkins@massey.ac.nz

Thank you again for your cooperation.

Name
PRINCIPAL

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A study of school-based nutrition and physical activity programmes

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In the course of this project, I will be surveying principals, teachers, children and parents at a number of primary schools in Auckland. I am interested in health promotion at your child's school and his/her diet and exercise behaviours. I am also interested in your perceptions of obesity, nutrition and physical activity issues.

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Email humanethicsalb@massey.ac.nz

The following questions are aimed at understanding parents' awareness and perceptions of health promotion programmes operating in schools.

1A. In mid 2004 the government launched a "Healthy Eating – Healthy Action" (HEHA) strategy. Are you aware of this?	**Yes ①**	**No ②**

The purpose of the HEHA strategy is to improve nutrition, increase physical activity and reduce obesity in the New Zealand population. The strategy identifies school-based health programmes as a means to address these issues in children.

1B. Please indicate which of the following school-based health programmes you are aware of, by ticking the appropriate box below. Please briefly explain what you believe the programme involves.

Programme	**Tick**	**Explanation**
5+ A Day Programme	①	
Health Promoting Schools	②	
Jump Jam	③	
Jump Rope for Heart	④	
National Heart Foundation School Food Programme	⑤	
Walking School Bus	⑥	
Other (please specify)	⑦	

2A. Please indicate which of the following health programmes operate in your school by ticking the appropriate box below. If there are NO such programmes operating in your school please go to Q4.	**Yes**	**No**	**Don't Know**
5+ A Day Programme	①	②	③
Health Promoting Schools	①	②	③
Jump Jam	①	②	③
Jump Rope for Heart	①	②	③
National Heart Foundation School Food Programme	①	②	③
Walking School Bus	①	②	③
Other (please specify)	①	②	③

2B. Did the existence of this type of programme influence your decision in selecting the school?	**Yes ①**	**No ②**
3A. If there is a health programme(s) operating in your school, did you receive any information about the programme(s)? If YES, please explain below.	**Yes ①**	**No ②**

3B. If there is a health programme operating in your school, what activities does this programme(s) involve for the children?		
3C. What do you believe is the objective of this programme(s)?		
3D. What do you expect from this programme(s)?		
3E. Do you have any involvement in the programme(s)? If YES, please explain.	**Yes ①**	**No ②**
3F. Have you experienced any difficulties as a result of this programme(s)? If YES, please explain.	**Yes ①**	**No ②**
3G. Have you noticed any SHORT TERM differences or changes in your child/children's eating and exercise behaviours as a result of this programme(s)? If YES, please explain.	**Yes ①**	**No ②**
3H. Have you noticed any LONG TERM differences or changes in your child/children's eating and exercise behaviours as a result of this programme(s)? If YES, please explain.	**Yes ①**	**No ②**

The following questions are aimed at understanding parents' perceptions of their own knowledge of eating and exercise.					
4A. I think my knowledge of government recommended dietary guidelines for children, is:	**Excellent**	**Very Good**	**Good**	**Fair**	**Poor**
	①	②	③	④	⑤
4B. I think my knowledge of government recommended exercise guidelines for children, is:	**Excellent**	**Very Good**	**Good**	**Fair**	**Poor**
	①	②	③	④	⑤
4C. I think my overall knowledge of healthy eating and exercise is:	**Excellent**	**Very Good**	**Good**	**Fair**	**Poor**
	①	②	③	④	⑤

4D. If you would like more knowledge in these areas please explain what information you would like to receive and how you would like to receive it.

_____

_____

_____

5A. Do you think YOUR diet is balanced? Please explain why/why not.	**Yes ①**	**No ②**	**Don't Know ③**

_____

_____

_____

5B. Do you think YOU exercise enough? Please explain why/why not.	**Yes ①**	**No ②**	**Don't Know ③**

_____

_____

_____

The following questions are aimed at understanding your attitude towards your children's eating and exercise behaviours. Please indicate your level of agreement or disagreement, with each statement, by ticking the most appropriate box corresponding to each question listed below.	**Strongly Disagree**	**Somewhat Disagree**	**Neutral**	**Somewhat Agree**	**Strongly Agree**
6A. I ensure that my children have a balanced diet	①	②	③	④	⑤
6B. I regularly discuss the value of a balanced diet and exercise with my children	①	②	③	④	⑤
6C. I am responsible for the food my children eat at school	①	②	③	④	⑤
6D. I believe that it is important for my children to have a balanced diet	①	②	③	④	⑤
6E. I have difficulty getting my children to eat 'good' foods	①	②	③	④	⑤
6F. I limit the amount of high fat foods my children eat	①	②	③	④	⑤
6G. I limit the amount of high sugar foods my children eat	①	②	③	④	⑤
6H. I find it difficult to limit the amount of high fat/sugar foods my children eat	①	②	③	④	⑤
6I. I ensure that my children exercise regularly	①	②	③	④	⑤

6J. I believe that it is important for my children to exercise regularly	①	②	③	④	⑤
6K. I have difficulty getting my children to exercise	①	②	③	④	⑤
6L. I encourage my children to participate in sports at school	①	②	③	④	⑤
6M. I encourage my children to participate in sports outside of school.	①	②	③	④	⑤
6N. I often exercise or play sports with my children	①	②	③	④	⑤
6O. I believe my own eating and exercise behaviour provides a positive role model for my children	①	②	③	④	⑤

7A. Please describe your children's attitudes towards a balanced diet.

_____

_____

7B. Please describe your children's attitudes towards exercise.

_____

_____

7C. How many hours per week do your children spend doing exercise?

_____

_____

The following questions are aimed at understanding your attitudes towards eating and exercise behaviour in general. Please indicate your level of agreement or disagreement with each statement by filling in the most appropriate box corresponding to each question listed below.	**Strongly Disagree**	**Somewhat Disagree**	**Neutral**	**Somewhat Agree**	**Strongly Agree**	**Don't Know**
8A. Healthy foods are more expensive than unhealthy ones	①	②	③	④	⑤	⑥
8B. Some people cannot afford to eat healthy food	①	②	③	④	⑤	⑥
8C. Junk food tastes better than healthy food	①	②	③	④	⑤	⑥
8D. Some people do not have time to prepare healthy food	①	②	③	④	⑤	⑥
8E. School tuck shops sell too much junk food	①	②	③	④	⑤	⑥
8F. In some neighbourhoods it is not safe for children to play outside unsupervised	①	②	③	④	⑤	⑥
8G. There are not enough sports/ exercise facilities for children in my neighbourhood	①	②	③	④	⑤	⑥
8H. Some people can not afford the costs of their children participating in sports outside of school hours	①	②	③	④	⑤	⑥
8I. People with busy schedules don't have time to exercise	①	②	③	④	⑤	⑥
8J. Exercising is boring	①	②	③	④	⑤	⑥
8K. Schools allocate enough time during the school day for exercise/ sports activities	①	②	③	④	⑤	⑥
8L. It is important that schools discuss healthy eating and exercising as part of children's education	①	②	③	④	⑤	⑥
8M. Schools place too much pressure on parents to support school activities	①	②	③	④	⑤	⑥

8N. People worry too much about healthy eating and exercising	①	②	③	④	⑤	⑥
8O. The media presents conflicting information about healthy eating and exercise	①	②	③	④	⑤	⑥
8P. Information about healthy eating and exercise is difficult to understand	①	②	③	④	⑤	⑥
8Q. It is the parents' responsibility to educate their children about healthy eating and exercise	①	②	③	④	⑤	⑥
8R. Governments should play a more active role in healthy eating and exercise programmes for children	①	②	③	④	⑤	⑥
8S. Governments should provide more funding for healthy eating and exercise programmes in schools	①	②	③	④	⑤	⑥

9. What sort of eating and exercise education would you like your school to provide?

I would appreciate some demographic information to ensure that participants in this study are representative of the population as a whole. Please indicate, by ticking the appropriate box, which of the following applies to you.

10. Gender	**Male** ①	**Female** ②
11. In what year were you born?	**Specify year here:**	
12. How many children do you have?	**Specify number here:**	

13. Please list the age and gender of your children between the age of 5 and 10:

14. What is your ethnic origin? If you belong to more than one group, please tick the group with which you most identify

NZ /European / Pakeha	①
NZ Maori	②
Samoan	③
Cook Islander	④
Niuean	⑤
Tongan	⑥
Tokelauan	⑦
Chinese	⑧
Korean	⑨
Indian	⑩
Other (please specify)	

Thank you for taking the time to complete the questionnaire. I appreciate your help with this research. I assure you that I am an independent Massey University researcher and I am not associated with any company or market research firm and I am not working for any government department or ministry. Should you wish to discuss any aspect of the research with me, please do not hesitate to contact me. If you would like to add any further comments on the issues covered in this questionnaire, please use the space provided overleaf.

Jacinta Hawkins
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Comments:

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A study of school-based nutrition and physical activity programmes

INFORMATION SHEET

(To be read to children – note wording will differ across age groups)

Researcher(s) Introduction

Hello, my name is Jacinta Hawkins. I am from Massey University.

This is (Research Assistant: Erica Styles/Darren Homman). He/She is also from Massey University and is here today to help me with this study.

Participant involvement

Today we are going to talk about health, food and physical activity. There will be no right or wrong answers. If you don‘t want to answer any questions you don‘t have to. I really want to know what you think about these things:

Questions:
(Indicative)

What kind of foods do you eat?
(a. breakfast, b. lunch, c. dinner, d. snacks)
Please tell me about healthy eating…
What kinds of foods are good for our bodies?
What kinds of foods are bad for our bodies?
Why should we exercise?
What kind of physical activities do you do?
What do you learn about food and physical activity at school?
Do you talk to your friends/family about food and physical activity?

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Focus Group Schedule

(INDICATIVE)

CHILDREN

Research Question: How might communication within school-based health interventions influence intervention implementation and exposure?

Concerned with:

- How communication of intervention elements is occurring, the types of messages being transmitted & whether the messages are being received.
- School stakeholders' perceptions and expectations of the nutrition and physical activity interventions they are involved in.
- Factors that may enhance or inhibit the communication process and implementation of school-based nutrition and physical activity interventions.
- Whether communication within Health Promoting Schools is more or less effective than communication within other schools and what (if any) impact this has on health interventions.

Questions will aim to address the following:

Do kids understand the value of healthy eating?
Do they have knowledge of food types/groups?
e.g. why we should eat fruit and vegetables and why we shouldn't eat lots of ‗junk'.
Do kids understand the value of exercise?
e.g. why we should play sports etc outside and not spend lots of time watching tv etc.
Do kids understand the notion of healthy eating and exercise to avoid getting fat? – and the link between being fat and being sick/unhealthy?
Do kids understand that their school is/ is not an HPS? What being an HPS means?
Do kids talk to their parents about food and exercise? About what they learn at school? Who communicates with them about nutrition and physical activity?
Do they enjoy healthy eating and exercising?
Do they enjoy learning about healthy eating and exercise?
What do they like about healthy eating and exercise?
What don't they like about healthy eating and exercise?
What do they eat at school? What do they eat at home?
What exercise do they do at home? e.g. outside of school
Has their behaviour changed? Are they aware of this?

Sample questions: (Indicative)

What kind of foods do you eat? (a. breakfast, b. lunch, c. dinner, d. snacks)
Please tell me about healthy eating…What kinds of foods are good/bad for our bodies?
Why should we exercise?
What kind of physical activities do you do?
What do you learn about food and physical activity at school?
Who do you talk to about food and physical activity?
Do you talk to your friends/family about these things?

(Note: questions will be adapted to suit each age group. Some questions will apply only to children at HPS's)

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A study of school-based nutrition and physical activity interventions

TRANSCRIBER'S CONFIDENTIALITY AGREEMENT

I ..... agree to transcribe the tapes provided to me.

I agree to keep confidential all the information provided to me.

I will not make any copies of the transcripts or keep any record of them, other than those required for the project.

Signature: ..... **Date:** .....

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A study of school-based nutrition and physical activity interventions

AUTHORITY FOR THE RELEASE OF TAPE TRANSCRIPTS

This from will be held for a period of five (5) years

I confirm that I have had the opportunity to read and amend the transcript of the interview/s conducted with me.

I agree that the edited transcript and extracts from this may be used by the researcher, *Jacinta Hawkins,* in her PhD thesis and in subsequent reports and publications arising from the research.

Signature: ..... **Date:** .....

Full Name - printed .....

APPENDIX C:
PARENT SURVEY SUMMARY STATISTICS

The results for each question in the parent survey are summarised in the table below. The first column contains the possible response options for each question. The first two questions are dichotomous, the remainder are scaled responses. The second column contains the mean of these values and the third column, the standard deviation.

Parent Survey Summary Statistics

Question	Response Options	Number of Responses	Mean	Standard Deviation
Have you noticed any SHORT TERM differences or changes in your child's health behaviours as a result of this programme(s)?	1=Yes 0=No	185	-	-
Have you noticed any LONG TERM differences or changes in your child's health behaviours as a result of this programme(s)?	1=Yes 0=No	183	-	-
I think my overall knowledge of healthy eating and exercise is:	1=Excellent 5=Poor	221	1.882	0.892
Do you think your diet is balanced?	1=Yes 0=No	220	0.791	0.408
Do you think you exercise enough?	1=Yes 0=No	217	0.498	0.501
I ensure that my children have a balanced diet.	1=Strongly Disagree 5=Strongly Agree	225	4.538	0.661
I regularly discuss the value of a balanced diet and exercise with my children.	1=Strongly Disagree 5=Strongly Agree	224	4.259	0.844
I am responsible for the food my children eat at school.	1=Strongly Disagree 5=Strongly Agree	224	4.754	0.566
I limit the amount of high fat foods my children eat.	1=Strongly Disagree 5=Strongly Agree	227	4.335	0.843
I limit the amount of high sugar foods my children eat.	1=Strongly Disagree 5=Strongly Agree	226	4.354	0.799
I encourage my children to participate in sports outside of school.	1=Strongly Disagree 5=Strongly Agree	228	4.417	0.811
Some people cannot afford to eat healthy food.	1=Strongly Disagree 5=Strongly Agree	221	2.796	1.495

Question	Response Options	Number of Responses	Mean	Standard Deviation
Junk food tastes better than healthy food.	1=Strongly Disagree 5=Strongly Agree	218	2.624	1.301
Some people do not have time to prepare healthy food.	1=Strongly Disagree 5=Strongly Agree	219	2.813	1.400
In some neighbourhoods it is not safe for children to play outside unsupervised.	1=Strongly Disagree 5=Strongly Agree	208	4.063	1.077
There are not enough sports/exercise facilities for children in my neighbourhood.	1=Strongly Disagree 5=Strongly Agree	213	2.624	1.401
Some people cannot afford the costs of their children participating in sports outside of school hours.	1=Strongly Disagree 5=Strongly Agree	214	4.229	0.934
People with busy schedules don't have time to exercise.	1=Strongly Disagree 5=Strongly Agree	222	3.153	1.340
Exercising is boring.	1=Strongly Disagree 5=Strongly Agree	221	2.054	1.193
People worry too much about healthy eating and exercising.	1=Strongly Disagree 5=Strongly Agree	217	2.263	1.171
The media presents conflicting information about healthy eating and exercise.	1=Strongly Disagree 5=Strongly Agree	213	3.263	1.231
Information about healthy eating and exercise is difficult to understand.	1=Strongly Disagree 5=Strongly Agree	221	2.172	1.119
It is the parents' responsibility to educate their children about healthy eating and exercise.	1=Strongly Disagree 5=Strongly Agree	218	4.284	0.985
Governments should play a more active role in healthy eating and exercise programmes for children.	1=Strongly Disagree 5=Strongly Agree	218	3.743	1.081
Governments should provide more funding for healthy eating and exercise programmes in schools.	1=Strongly Disagree 5=Strongly Agree	219	4.027	1.108