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Knowledge of Type 2 Diabetes in the New Zealand Population and Effectiveness of Knowledge-Based Interventions

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Knowledge of Type 2 Diabetes in the New Zealand Population and Effectiveness of Knowledge-based Interventions



An Interactive Qualifying Project report submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements for the
Degree of Bachelor of Science

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Report Submitted to:

Child Obesity & Type 2 Diabetes Prevention Network
Wellington, New Zealand

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This report represents work of WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its web site without editorial or peer review. For more information about the projects program at WPI, see <http://www.wpi.edu/Academics/Projects>.

ABSTRACT

To support the Child Obesity & Type 2 Diabetes Prevention Network in reducing the rise of diabetes in New Zealand, our team administered 401 questionnaires to assess knowledge of Type 2 diabetes among residents of greater Wellington; prior research had studied only clinical patients. We coupled those findings with key strategies utilized by other successful knowledge-based health campaigns to design two approaches to a diabetes awareness campaign tailored to those now known to be least aware of the disease.

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EXECUTIVE SUMMARY

Type 2 diabetes is a global epidemic that disrupts how the body metabolizes glucose into energy, leading to complications such as heart disease, blindness, and kidney failure. An individual's risk of Type 2 diabetes increases drastically with poor lifestyle decisions such as an unhealthy diet and lack of exercise. As a result, organizations in New Zealand, such as the Child Obesity & Type 2 Diabetes Prevention Network, are seeking to implement diabetes awareness campaigns in an effort to educate the public about the preventative nature of Type 2 diabetes and ultimately lower the prevalence of the disease.

Health awareness campaigns can utilize numerous channels of outreach, such as television, radio, billboards, posters, magazines, newspapers, and Internet. Campaigns utilizing these media outlets can influence the target audience either directly or indirectly. However, barriers such as the knowledge gap, self-positivity bias, and temporal orientation may prevent a campaign from making the intended behavioral impact on its audience. Proper choice of strategies such as campaign format and message framing can help overcome the barriers that may hinder the success of a campaign.

Methodology

The goal of this project was to aid the Child Obesity & Type 2 Diabetes Prevention Network in assessing the current knowledge among the general New Zealand population and providing recommendations for an awareness campaign tailored towards their society. The campaign itself would aim to raise awareness about Type 2 diabetes and its risk factors in order to prevent future cases of the disease. As part of our assessment, we administered a questionnaire on Type 2 diabetes knowledge to 401 people in the greater Wellington, New Zealand, area and interviewed three local organizations about health campaigns aimed at altering deleterious behaviors. To attain the project goal we accomplished three objectives:

1. Assess the existing levels of understanding and attitudes towards Type 2 diabetes in the general population of the greater Wellington, NZ, area
2. Identify the most successful strategies utilized by current diabetes campaigns in New Zealand for altering behaviors and preventing an increase in Type 2 diabetes
3. Identify the most successful strategies utilized by public health campaigns aimed at altering deleterious behaviors in New Zealand

To assess the current knowledge and attitude towards Type 2 diabetes we developed a questionnaire with the assistance of our sponsor, the Child Obesity & Type 2 Diabetes Prevention Network. We administered 401 questionnaires in the public areas of Central Wellington – Cuba Street, Wellington Railway Station, Civic Square and Midland Park at Lambton Quay – as well as the outer suburbs – Lower Hutt and Porirua – to obtain a sample population with diverse demographics. The questionnaire was designed to gather information regarding the population’s gaps in knowledge and attitudes towards Type 2 diabetes as well as healthy eating and temporal orientation – the way an individual views the outcomes of his or her actions.

To identify the most successful strategies utilized by health campaigns regarding changing lifestyle behaviors in New Zealand – objectives two and three – we interviewed representatives of various health awareness organizations including Diabetes New Zealand (DNZ), Health Promotion Agency (HPA), and Quitline. We interviewed DNZ to gain insight into past diabetes campaigns in New Zealand. We interviewed HPA to obtain information about nutrition and fitness campaigns. We interviewed Quitline about their anti-smoking campaigns to gain insight into successfully reaching out to the public.

Results

The questionnaire evaluated respondents’ attitudes towards the seriousness of Type 2 diabetes, healthy eating, and the consequences of the respondent’s actions. A majority of the New Zealand residents who responded to our questionnaire believed that Type 2 diabetes is a serious condition. A large majority – 98% – of them had a positive attitude towards healthy eating and believed it is essential to their well-being. Sixty-five percent of respondents were future-oriented, meaning that they consider the long-term consequences of an action compared to primarily thinking of the immediate consequences.

Each respondent’s knowledge of Type 2 diabetes was assessed through a series of thirteen questions. On average, participants answered correctly 63% of those questions on diabetes knowledge. The knowledge section of the questionnaire identified two gaps. The first is respondents had mainly incorrect perceptions or did not know that Type 2 diabetes is an illness in which one has more than normal levels of sugar in the blood. Second, about half – 49% – of

respondents either answered incorrectly or “neither agree nor disagree” to the statement “Type 2 diabetes is related to eating too many fats”, which is in fact true.

Levels of knowledge about Type 2 diabetes among the general population vary with income, age, and ethnicity. Respondents to our questionnaire with an income of NZ\$45,000 and under knew significantly less about Type 2 diabetes than people with an income over NZ\$45,000. Participants forty years old and under knew less than those forty-one and over. Māori respondents knew significantly less than NZ European/Pakeha respondents.

From interviews with staff of a variety of organizations with health awareness missions similar to that of the Type 2 Diabetes Network, we learned that both positive and negative framing could be successful when creating campaign messages. Positive framing is best where support, encouragement, and motivation are desired. Negative framing can be used to initiate feelings of guilt or sadness that can ultimately prompt a change in behavior.

Combining findings from the questionnaire and from our expert interviews, we determined that television is the most effective channel of outreach to spread a message. Responses to our questionnaire identified television as the most common channel for seeing or hearing a diabetes advertisement. Our expert interviews further supported utilizing television advertisements as well as encouraged radio advertisements, which work well to reach the Pacific population. Furthermore, our expert interviews suggested posters as another effective way to spread campaign messages.

The experts we interviewed recommended scheduling a campaign in the month of January, on Mondays, and during peak as well as off-peak hours as the best strategy. January is right after the holidays when people are making New Year’s resolutions, are more open to change, and there is a less crowded media environment compared to December. People are most willing to change their behavior on Mondays. Also, a campaign utilizing television should schedule messages during peak – 6:00PM to 9:00PM – hours as well as off-peak – daytime hours.

Based upon our interviews we learned that funding is an essential component for the distribution of health awareness campaigns and programs. Funding increases the quantity of messages and channels of outreach as well as the quality of advertisements. Organizations can collaborate by utilizing networks and connections with other organizations, companies, and

people to strengthen their effects within the community through gaining funding, support, advice, and helping one another.

Recommendations

We recommend that organizations seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand:

Collaborate and link with one another. Collaboration increases brainpower as well as funding, thereby increasing the likelihood of a successful campaign.

Build public trust. Organizations should make themselves known to the public in order to create a personal connection because people trust familiarity. In order to build public trust, organizations should get their names and faces in the community by making appearances at public festivals and events of all varieties.

Target Māori and Pacific people, people with an income under NZ\$45,000, and people forty years old and under. These three groups know less about Type 2 diabetes, which puts them at a greater risk for developing Type 2 diabetes because they are less aware of how to prevent it. It is nearly impossible to reach the general population with a campaign, and it is necessary to prioritize the audience most at risk for Type 2 diabetes.

Simplify the message of their awareness campaigns. For a campaign to be successful it must convey a clear message that can be easily understood by the target audience. An organization must take into account the baseline level of knowledge that the target audience already holds. The organization should choose a few key messages to convey to avoid overwhelming their target audience.

Develop advertisements applying the following guidelines. If resources are unlimited, a diabetes organization should: utilize both positively and negatively framed messages, to reach both those who require support and those who require an extreme emotion to initiate change in behavior; frame the message around the long-term benefits of a healthy lifestyle as well as the consequences of Type 2 diabetes; utilize Māori and Pacific representatives as well as children in advertisements to be more relatable; utilize television and radio advertisements; and release advertisements in January, at peak and off-peak hours, on a Monday.

If resources are limited, a diabetes organization should follow the same guidelines as outlined above except for the following: utilize only positive framing and the long-term benefits of a healthy lifestyle, in addition to only posters as the channel of outreach.

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1.0 INTRODUCTION

The incidence of Type 2 diabetes is increasing on the scale of a global epidemic. The World Health Organization claims that worldwide “diabetes will be the seventh leading cause of death by 2030” (Alwan, 2011); currently, diabetes is the eighth leading cause of death (WHO, 2013). Many factors increase the risk for this chronic condition: advancing age, obesity, lack of regular exercise, an unhealthy diet, and being in certain ethnic groups (Basics about Diabetes, 2012). Common complications of Type 2 diabetes include heart disease, stroke, blindness, and kidney failure, the last potentially leading to death. Fortunately, individuals can reduce their risk of Type 2 diabetes and its many complications through healthy behavioral changes, the goal of numerous awareness and prevention campaigns.

New Zealand is among several countries facing a steady rise in prevalence of Type 2 diabetes. In 2012, the number of Type 2 diabetes cases was 335,600. In 2013, the number of Type 2 diabetes cases had increased to 342,680, representing a 2% increase in just one year. By comparison to other regions of the globe, the Western Pacific has the highest prevalence of Type 2 diabetes (IDF PowerPoint, 2013). The increase of Type 2 diabetes in this region could be attributed to the ethnicities that are located there. For example, in New Zealand 9.8% of the Māori population and 15.4% of the Pacific population, two minorities, have Type 2 diabetes (Coppell, 2013). The rise in the number of cases of Type 2 diabetes in New Zealand has not gone unnoticed. Diabetes awareness campaigns as well as community programs have been created in an effort to increase awareness about the disease.

Currently, various channels of outreach in New Zealand provide the population with information about Type 2 diabetes prevention. However, this information is currently not making its intended impact on the populace: New Zealand still has high levels of obesity, poor nutrition, and inactivity – all risk factors for diabetes (Wilson, 2006). In addition to present risk factors, numerous barriers, both internal and external, can also lead to a disconnect between knowledge and positive behavioral change (Barnett, Pearce, & Howes, 2006). Eliminating the disconnect between knowledge and behavior in New Zealand may be difficult because it is a cultural melting pot. Cultures like the Māori and Pacific may be harder to reach due to cultural isolation and culturally specific diets. They tend to live in rural areas and not pursue higher education as well as disregard appropriate portion sizes, which may cause obesity (Metcalf, 2008). In order to

overcome the barriers present, Type 2 diabetes awareness campaigns must incorporate the most effective methods for reaching their target population.

Our team carried out a study to measure levels of knowledge about and attitudes towards Type 2 diabetes in the general New Zealand population as well as to determine the effectiveness of knowledge-based interventions. A study of this nature involving the general population has never been attempted in New Zealand; previous studies have focused only on clinical patients with Type 2 diabetes or those at high risk for it. This study assisted the Child Obesity & Type 2 Diabetes Prevention Network in raising awareness in New Zealand about Type 2 diabetes and its risk factors in order to prevent future cases of the disease (see Appendix A for more information about the network).

The outcomes of this work include a baseline of diabetes knowledge among the general New Zealand population and guidelines for formulating more effective diabetes awareness campaigns tailored to the New Zealand population. Our team administered a survey assessing the knowledge of Type 2 diabetes among a sample in Wellington, New Zealand, and we reviewed other public health outreach initiatives. Combining the two sets of findings led to recommendations for future diabetes awareness campaigns that address the gaps we identified in public understanding of Type 2 diabetes.

Among the highlights of the baseline of public understanding established by our study were that 93% of respondents knew that there are different types of diabetes, 91% of respondents knew being obese increases your risk of developing Type 2 diabetes, and 78% of respondents knew eating too many sweets increases your risk of developing Type 2 diabetes. Overall, our sample population had a positive attitude towards healthy eating, deeming it essential to their well-being. On the other hand, the sample population had misconceptions about the relationship between Type 2 diabetes and eating fats as well as the relationship between Type 2 diabetes and blood sugar levels.

From our findings, we recommend organizations seeking to implement a diabetes awareness campaign collaborate with other organizations, build public trust, target the audience most at-risk, and simplify their messages. Organizations developing advertisements should also utilize best practice methods for message framing, channels of outreach, and scheduling.

2.0 LITERATURE REVIEW

Type 2 diabetes is a global epidemic that disrupts how the body metabolizes glucose into energy, leading to complications such as heart disease, blindness, and kidney failure. An individual's risk of Type 2 diabetes increases in association with a series of factors including unhealthy behaviors, increasing age, family history, or ethnicity (see Appendix B for more information on diabetes, the factors that cause it, and its potential complications). Type 2 diabetes is currently the eighth leading cause of death in the world and is largely preventable through the adoption of a healthy lifestyle (WHO, 2013). According to Coppell (2013), 9.8% of the Māori, 15.4% of the Pacific, and 6.1% of the total European population in New Zealand have diabetes (see Appendix C for more information regarding the health and demographics of the New Zealand population). The percentages of Type 2 diabetes cases among different ethnic groups in New Zealand indicate a high prevalence rate, especially for a preventable disease. As a result, organizations in New Zealand, such as the Child Obesity & Type 2 Diabetes Prevention Network, have called for the implementation of diabetes awareness campaigns in an effort to educate the public and ultimately lower the prevalence of the disease.

An individual's risk of Type 2 diabetes increases drastically with poor lifestyle decisions such as an unhealthy diet and lack of exercise. Health awareness campaigns attempt to change such deleterious behaviors. First, we will examine a campaign's effect on behavior, which will allow us to ascertain the routes, both indirect and direct, by which an advertising campaign may influence lifestyle decisions. We will then examine the barriers, both internal and external, that may prevent a campaign from making the intended behavioral impact on its audience. Then we will investigate tools, such as format and types of message framing, which can be utilized to overcome the barriers that may hinder the success of a campaign. Finally, we will examine the successes of other health awareness organizations and campaigns in order to extrapolate their methods for success.

2.1 Health Awareness Campaigns

A public awareness campaign is a common strategy utilized in attempts to “change health behaviors and improve health outcomes” regarding public health issues, particularly those like Type 2 diabetes with a lifestyle component (Randolph & Viswanath, 2004).

[2.1.1 Channels of Outreach for Health Awareness Campaigns](#)

Health awareness campaigns distribute messages about a health risk in order to promote more health-conscious behaviors. Campaigns rely heavily on placing messages in media that reach large audiences, such as television and radio. Outdoor media like billboards and posters, as well as print media, such as magazines and newspapers, are also sometimes used in order to spread the message. In this technological age, the Internet can be used to provide information on health campaigns, but delivery via Internet usually requires the individual to actively seek this information. Media health campaigns are often supplemented with educational events offered in selected communities intended to better engage the target audience. Educational programs can include organized community events promoting fitness, healthy eating habits, or teaching the community about a health issue (Wakefield, Loken, & Hornick, 2010).

Health awareness advertising campaigns in New Zealand incorporate advertisements into various media such as newspaper articles, posters, billboards, jingles, and interviews on local radio and television. Similar to other countries, health promotions in New Zealand also utilize local role models, personalities, and scenery so that the viewer can easily identify with the campaign (Coppell, 2009). For example, rugby star Wayne Shelford was used as the main spokesperson in a recent campaign by the Health Promotion Agency of New Zealand (HPA, 2013).

[2.1.2 How Advertising Influences Behavior](#)

Lifestyle decisions, such as the ones that are targeted in diabetes awareness campaigns, are influenced by the education presented in awareness campaigns. Through a meta-analysis of various influential theories of changing health-related behavior, Hornik and Yanovitzky (2003) identified two channels, which they labeled direct and indirect, through which campaigns can influence their target audiences.

Direct exposure to the message delivered by a health campaign, whether through media advertisements, educational events in the target community, or other forms of messages, increases an individual's knowledge about the health issue. Using this increased knowledge, that person may form positive or negative behavioral intentions that can later translate into actual behavior.

Indirect exposure to health campaigns can take two different channels: diffusion into institutions or social diffusion. Diffusion into institutions, such as government, mass media, or

religious organizations, can cause people who were not directly exposed to the campaign to be secondarily influenced by the message of the campaign. On other occasions, these institutions can also more directly influence the population's behavior with external constraints like laws limiting unhealthy behaviors (Hornik & Yanovitzky, 2003). An example of diffusion into institutions would be reducing smoking by increasing taxes on cigarette products (Hu, Sung, & Keeler, 1995). Social diffusion can occur when those exposed to a campaign are prompted to share their acquired knowledge with others who were not exposed, or when the community's social norms and expectations change concerning the underlying deleterious habit.

Figure 1 illustrates the three paths – two indirect and one direct – by which public health campaigns affect behavior. The path in the middle of this figure represents the direct path of influence, and the paths above and below represent the indirect paths by which campaigns can impact a community. As described in the text box in the bottom of the figure, exogenous factors could potentially influence the population's behavior. Those factors include an individual's demographic characteristics, prior behavior, and personality traits as well as the characteristics of the social environment around the individual. The exogenous factors could either directly influence behavior or influence a person's susceptibility to the message of the campaign.

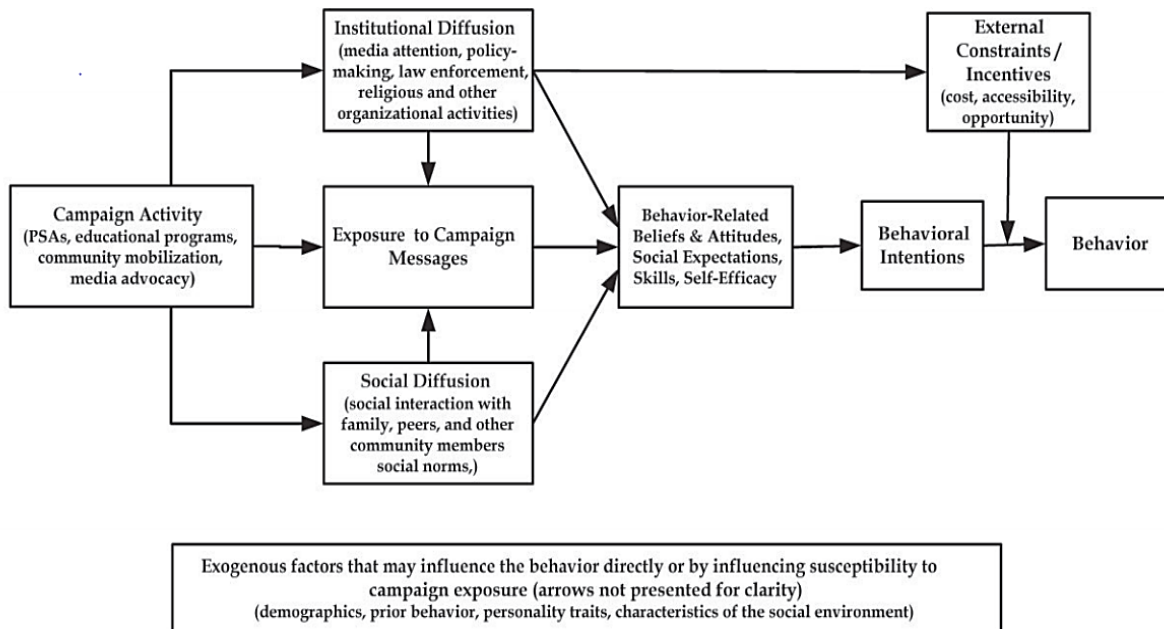


Figure 1: Model of flow of health campaign's influence (Hornik & Yanovitzky, 2003)

Advertising reaches its intended audience through the different paths of influence. The intended audience is then prompted to think about and consider altering their behavior.

Awareness of the different paths of influence aids the development of successful health awareness advertising campaigns.

2.2 Overcoming the Barriers to Successful Health Awareness Campaigns

Appropriate strategies can help health awareness campaigns overcome the numerous barriers to successfully influencing their target population.

2.2.1 Barriers to the Success of Health Awareness Campaigns

Barriers to effective health awareness campaigns fall into two broad categories: external physical barriers and internal psychological barriers. External physical barriers prevent a campaign's message from successfully reaching the intended audience, and internal psychological barriers prevent the message from making an impact on those exposed to it.

External physical barriers include inadequate funding which could hinder the distribution of a health campaign, inappropriate formatting and placement of the campaign, and today's cluttered media environment (Wakefield, Loken, & Hornick, 2010). A chaotic media environment may prevent the campaign from reaching its intended audience, or conversely, marketing for counteractive products may oppose the message of the health awareness campaign. Figure 2 shows a prime example of such a mixed message.



Figure 2: Example of the mixed messages in media today (Apollonio, & Malone, 2009)

External physical barriers in New Zealand stem from various living circumstances in the population. Remote areas that lack extensive media and tend to have high concentrations of Māori and the Pacific make it difficult for campaigns to reach such communities (Coppell, 2009). Also, in New Zealand, the elderly and lower income populations have less access to

regular quality healthcare, which makes these individuals harder to reach with public health information (Mark, 2011).

Numerous studies have assessed the internal psychological barriers present in individuals that hinder the adoption of healthy behavioral changes. One of these barriers is a phenomenon known as the “knowledge gap,” in which knowledge about health issues fails to translate into adoption of healthy behaviors (Sligo & Jameson, 2000). This gap may arise from the so-called self-positivity bias, in which individuals hold the belief that they are less vulnerable than others and thus impervious to the threat of a disease (Menon, Block, & Ramanathan, 2002). When people believe they are not at risk for a health concern, they do not feel the need to change their unhealthy behavior.

Another category of internal psychological barrier is psycho-social, which results from the social environment in which the person exposed to the awareness campaign lives. For example, an individual’s social environment may lack favorable familial support or produce pressure from peers not to adhere to the suggested healthy behaviors laid out in the campaign (Barnett, Pearce, & Howes, 2006). This barrier recognizes the deep interdependency between individuals and the environment surrounding them.

Psycho-social barriers are a substantial obstacle in New Zealand, especially within the Māori, Pacific, and other minority groups. These ethnic groups historically have strong community ties that support such the traditional ways such as eating large portions of unhealthy cultural cuisine, most of which is high in sugar as well. These traditional but unhealthy diets contribute to the higher prevalence of diabetes among these groups (Metcalf, 2008).

People may also choose whether or not to respond to health awareness campaigns based on their temporal orientation. Temporal orientation refers to the beliefs individuals hold about how their actions will affect the rest of their lives. People who are future-oriented are concerned with the long-term consequences of an action, while people who are present-oriented only think short-term and live in the moment. Those who think long-term are more apt to respond to health awareness campaigns because they are concerned with the future and how their behaviors will affect their long-term future health (Kees, Burton, & Tangari, 2010).

[2.2.2 Strategies for Success of a Health Awareness Campaign](#)

When creating a health awareness campaign, one of the most important decisions is whether to frame the message positively or negatively. Positive framing stresses the positive

outcomes of adhering to the campaign and is more useful when the awareness campaign concerns a highly compelling message that does not make the individual carefully evaluate the message (Block & Keller, 1995). Negative framing, on the other hand, states that if an individual does not take the precautions laid out in the health awareness campaign, he or she will contract the health issue and its resulting consequences. A study by Block and his colleagues stated that if the campaign causes an individual to consider the efficacy, or ability to produce the desired result, and weigh the tradeoffs of the suggested behavioral changes, then the message should be framed in a negative context to make the individuals more apt to change their behavior. In other words, “if it is uncertain that the recommendations will lead to the desired outcome, negative frames are more effective than positive ones” (Block & Keller, 1995). This work suggests that negative framing may be more successful for diabetes health campaigns because they call for changes to healthier lifestyles and audiences may be uncertain that being healthy will decrease their risk of Type 2 diabetes.

Although framing the message of an awareness campaign is often the first step in formatting a campaign, campaign designers must also consider the different types of barriers that can hinder the success of a health awareness campaign. Table 1 summarizes some of those barriers alongside counteracting strategies.

Table 1: Barriers and their respective strategies for success

	Barrier	Strategy for Success
External Barriers	Crowded Media Environment	Creativity in both placement and format of the campaign
	Māori, Pacific, and Minority Groups in More Remote Areas	Strategic placement of campaigns
Internal Barriers	Māori, Pacific and other Minorities Have Strong Community Ties	Aim to change the whole community
	Knowledge Gap	Be specific about behavioral goals
	Temporal Orientation	Proximal v. Distal Framing

In order to combat a crowded media environment, health awareness campaign should be creative in format as well as placement. An advertisement needs to be placed in such a way that it has high exposure but also framed in such a way that it grabs the attention of its audience and keeps them intrigued long enough for them to understand the message. The more creative the

health awareness advertisement, the better chance it has of increased exposure and interest in this crowded media world (Randolph & Viswanath, 2004).

Geographically isolated Māori and Pacific groups are harder to reach in New Zealand (Coppell, 2009). In order to counteract geographic isolation, one could strategically place campaigns in rural settings using various forums. Placing advertisements on buses and billboards may not be as effective in a rural area as newspaper campaigns and radio advertisements.

The strong community ties present among the Māori people and the Pacific people can be a challenge for health awareness campaigns. Research has shown it is important to aim the campaign at whole communities in order for individuals to feel supported (DHB Toolkit, 2003). If the whole community is being targeted in the message, then it will create a more supportive social environment that may foster positive change in the community.

The knowledge gap — people know something is deleterious but will not translate that knowledge into healthy behavior — can be combatted with the use of specific behavioral goals in a health awareness campaign. If a campaign states an intermediate goal, such as decreasing the prevalence of a disease or raising awareness about a disease, the population may not translate that message into a positive behavioral change. Thus, it is important to specify behavior change goals rather than simply frame a campaign to raise awareness about the longer-term implications of the issue (Snyder, 2007). Directly stating the desired behavior changes increases the chance of positive behavioral change in the population.

The two temporal orientations, present and future, may affect how someone interprets the message of a health awareness campaign. Those who are oriented in the present, thinking only short-term, may respond more to a message that is framed with a proximal (near future) message, which stresses the short-term urgency of the health issue. Those who are future oriented, thinking long-term, will respond more to a distally (distant future) framed message, which stresses the longer-term implications of the disease (Tangari, Folse, Burton, & Kees, 2010).

2.3 Previous Health Awareness Campaigns

Successes of previous health awareness campaigns, both those pertaining to diabetes as well as other health issues, provide useful guidelines for designing new diabetes awareness campaigns (see Appendix D for a table of current diabetes campaigns in New Zealand whose successes have yet to be evaluated). Here we summarize the relevant characteristics of successful anti-smoking campaigns and the communication strategies of Diabetes Australia.

2.3.1 Successful Anti-smoking Campaigns

Successful anti-tobacco campaigns are useful models for Type 2 diabetes awareness campaigns because both call for lifestyle changes.

Anti-smoking campaigns warning of tobacco's dangers have been implemented in several countries, allowing researchers to study their impacts on the population's behavior across demographics and cultures. Numerous studies (e.g. Friend & Levy, 2002; Farrelly, Pechacek, Thomas, & Nelson, 2008; Marcus, 2008) have concluded that anti-tobacco campaigns can reduce tobacco use. One particular study by the National Cancer Institute revealed that the success of tobacco awareness advertising is greater when the advertisements carry "strong negative messages about health consequences" regarding tobacco use (Marcus, 2008), an example of negative framing that may prove useful in Type 2 diabetes prevention. The negative framing was able to alter the deleterious behavior of smoking in a population, so it may be able to alter the unhealthy behaviors associated with Type 2 diabetes, such as lack of exercise and poor diet.

Anti-smoking campaigns specifically in New Zealand have been very successful at spreading awareness about the dangers of smoking. Smoking habits have been targeted mainly through television advertisements that rely on the risks of smoking to persuade individuals to quit, another example of negative framing. A national government funded program against smoking has been successful in decreasing the percentage of people who smoke, and it has been surprisingly effective among the Māori, who have higher than average rates of smoking (Bateson, 2012). The success of negatively framed anti-smoking campaigns in New Zealand provides strong evidence that a negatively framed Type 2 diabetes campaign could initiate desirable behavioral changes in the target population.

2.3.2 Diabetes Australia Communication Techniques

Diabetes Australia is the third oldest diabetes advocacy group in the world. The goal of Diabetes Australia is to improve the health and wellness of those living with diabetes as well as to reduce the prevalence of the disease in Australia. Diabetes Australia's approach to health campaigns provides a useful model for future diabetes awareness campaigns in New Zealand because the two countries share similar cultures and are striving for the same health outcomes. Diabetes awareness campaigns in New Zealand could incorporate the effective communication methods that Diabetes Australia has compiled to address the New Zealand population in a way best tailored towards its people.

For those living with diabetes or other clinical conditions, poorly chosen language can do particular damage. Interviews with patients living with diabetes in 2004 revealed that when language is used incorrectly, a person may adopt a “spoiled identity”. A spoiled identity refers to one who feels morally responsible for his/her disease, feels less than normal in society, and tries to avoid his/her condition by living in denial (Broom, 2004). On the other hand, when used correctly, language improves the psycho-social state of a patient (Street, 2009). In 2004, trials that analyzed various clinical patient/ physician relationships found a 44% increase in positive disease outcome rates in patients whose physicians utilized more positive language (Griffin *et. al.*, 2004).

Diabetes Australia strove to use effective language in their campaigns. Table 2 gives an example of some of the words that Diabetes Australia suggests should be avoided or used when addressing the community on diabetes. Although avoiding negative language may seem contradictory to the negative framing suggested earlier, word choice is not what dictates the framing of a message, and a message can still portray a negative effect with the use of less aggressive wording. Each word to avoid is translated to a word or phrase that will be less offensive and more encouraging to people with diabetes (Speight, 2012).

Table 2: Diabetes Australia effective word choices

Words to Avoid	Words to Use
Diabetic	Person living with diabetes
Disease	Condition
Normal, healthy people	People without diabetes
Should, should not, have to, can't, must, must not	You <i>could</i> [consider, try, choose]
Failed	Did not
Treating the patient	Manage diabetes

Diabetes Australia also acknowledged ten specific factors that it relies on for campaigns, based on results from Broom’s (2004) and Street’s (2009) studies (Speight, 2012). Figure 3 shows Diabetes Australia’s guidelines for outreach. The emphasis is on communication and language throughout.

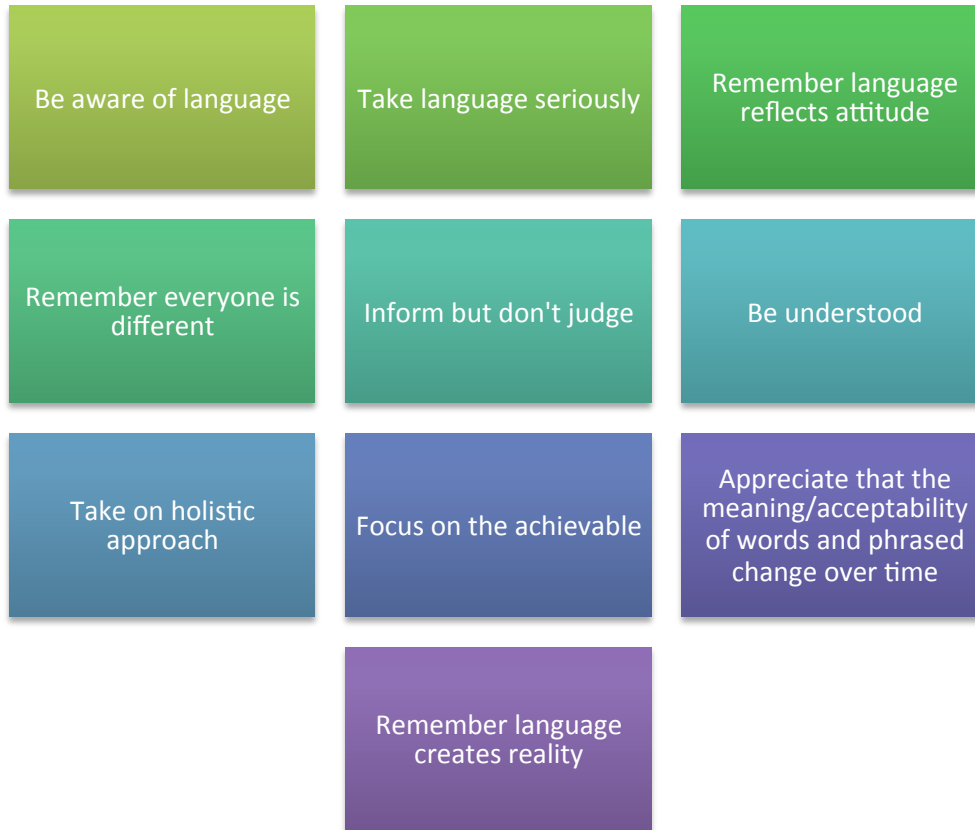


Figure 3: Diabetes Australia guidelines for public outreach

Diabetes Australia’s effective language and communication guidelines could encourage lifestyle changes in the New Zealand population without causing emotional harm to those living with diabetes.

2.4 Summary

Health awareness campaigns provide individuals with the guidance and education necessary to live a healthy lifestyle. In order for a New Zealand health awareness campaign to be effective, it needs to overcome the crowded media environment, Māori and Pacific cultural isolation, the knowledge gap, and temporal orientation. To grasp the attention of and initiate change in the New Zealand population, a diabetes awareness organization should consider the use of negative framing, such as in anti-tobacco campaigns, as well as the use of proper communication, such as in Diabetes Australia campaigns, when creating a diabetes awareness campaign tailored to the New Zealand population.

3.0 METHODOLOGY

The goal of this project was to assist the Child Obesity & Type 2 Diabetes Prevention Network in ascertaining the level of knowledge concerning Type 2 diabetes in the New Zealand population and to determine the effectiveness of knowledge-based interventions. In order to fulfill this goal we established the following objectives:

- Assess the existing levels of understanding and attitudes towards Type 2 diabetes in the general population of the greater Wellington, NZ, area
- Identify the most successful strategies utilized by current diabetes campaigns in New Zealand for altering behaviors and preventing an increase in Type 2 diabetes
- Identify the most successful strategies utilized by public health campaigns aimed at altering deleterious behaviors in New Zealand

Figure 4 gives an overview of the steps we took to complete our project.

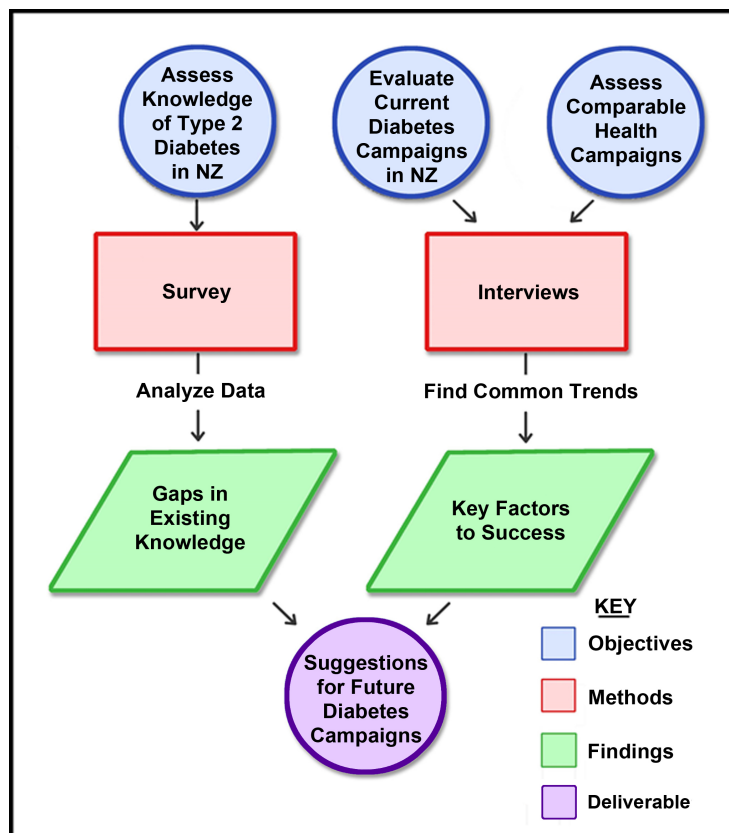


Figure 4: Methodology overview - The three circles at the top represent the objectives of this project, followed by two squares that show the methods we took to complete each objective. From our methods we were able to find gaps in knowledge and key factors to success. By integrating our findings, we were able to formulate the final deliverable, represented by the bottom circle.

In this chapter, we will describe the process and reasoning behind each method we used to gather our information.

3.1 Māori Social and Cultural Class

In order to comply with cultural ethics, we attended a social and cultural Māori class held by a Māori health professional. We attended this class to familiarize ourselves with the Treaty of Waitangi obligations as well as the relevance of health issues in the Māori population. We obtained a more in-depth understanding of the Māori culture as well as learned how to effectively communicate with Māori without offending their culture.

3.2 Assessing Existing Levels of Knowledge and Attitudes

One focus of this project was to assess current knowledge and attitudes towards Type 2 diabetes in the greater Wellington, New Zealand, population. Previous studies have only been conducted on clinical patients, but our study focused on the overall population.

We developed a questionnaire, with the assistance of our sponsor, to measure the knowledge of the New Zealand population regarding Type 2 diabetes as well as the population's attitudes towards diabetes and health. To ensure that our questionnaire met all specifications, we followed *A Guide To Good Survey Design* produced by Statistics New Zealand (1995). This guide outlines survey management and the best practices in survey construction. Figure 5 displays the organizational actions that we took, following the suggestions of Statistics New Zealand.

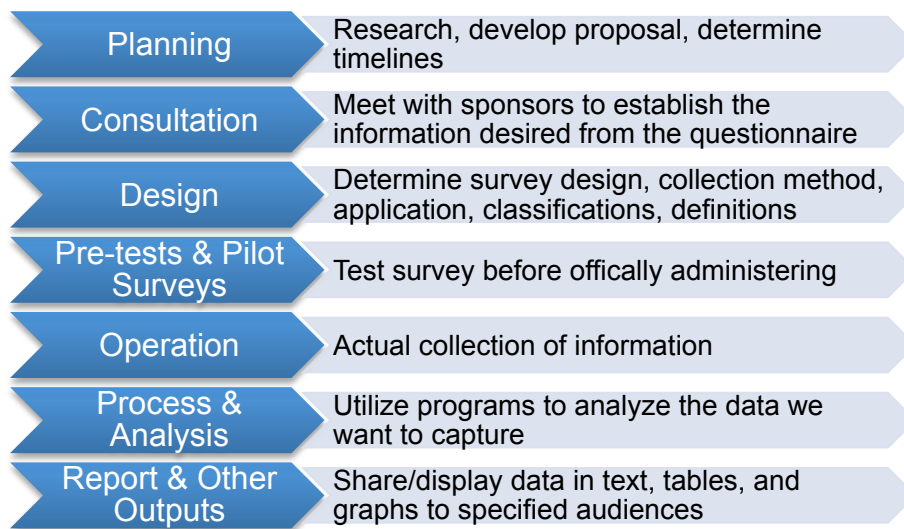


Figure 5: Survey management tools

3.2.1 Developing the Questionnaire

We designed the questionnaire to utilize Likert scale questions, multiple-choice questions, and open-ended questions. Table 3 displays the breakdown by topic of the general content of our questionnaire. Each question was designed to gather information regarding the population’s gaps in knowledge about diabetes, attitudes towards diabetes as well as healthy eating, and temporal orientation.

Table 3: Questionnaire content showing question topics and information objectives

Question Topic	Question Format	Number of Questions	Information Obtained
Knowledge of Anyone Diagnosed with Diabetes	Multiple Choice	3	Information about respondent
Knowledge of Diabetes	Likert Scale	13	Gaps in knowledge
	Yes/No, Open ended	3	
Attitudes towards Diabetes	Likert Scale	6	Seriousness of issue, Gaps in knowledge
Attitudes/Intentions towards Healthy Eating	Likert Scale	7	Respondent’s willingness to eat healthily
Temporal Orientation	Likert Scale	7	Respondent’s view on the outcomes of their actions
Demographics	Multiple Choice	9	Information about respondent

The survey was reviewed by five experts in the diabetes field and was piloted among classmates as well as New Zealanders in Newtown in order to identify and address any issues with the survey, including wording or content. The next section outlines the questions that addressed each topic. (See Appendix E for the complete survey).

3.2.2 Questionnaire Summary

The following subsection displays the specific questions serving each topic area from Table 3. We were able to test determine if those who knew someone with diabetes knew more about Type 2 diabetes than those who did not by asking the questions in Table 4.

Table 4: Knowledge of anyone diagnosed with diabetes

Knowledge of Anyone Diagnosed with Diabetes
Do you have diabetes?
Do you personally know anyone who has diabetes?
Do you have a family history of diabetes that you are aware of? What relationship are they?

We then measured the knowledge of diabetes in the general New Zealand population by asking the questions in Table 5. We utilized a Likert scale response for the majority of the knowledge questions, opposed to a True/False approach, in order to minimize guesses and get a sense of the confidence for each answer – i.e. *strongly agree* indicated a more confident response than *slightly agree* (Albaum, 1997).

Table 5: Knowledge of diabetes

Knowledge of Diabetes	
This research refers to Type 2 diabetes, were you aware that there are different types of diabetes?	
<p>Using the 7 point scale where 1 is strongly disagree, 4 is neither agree nor disagree, and 7 is strongly agree, please indicate the extent to which you agree or disagree with the following statements about Type 2 diabetes.</p>	Type 2 diabetes is an illness preventable by vaccination
	Type 2 diabetes is a consequence of being frightened or of an intense emotional experience
	Type 2 diabetes is an illness in which you have less than normal sugar in the blood
	Type 2 diabetes is an illness produced by poor functioning of the pancreas
	Eating too many sweets increases your risk of Type 2 diabetes
	Being over 40 increases your risk of Type 2 diabetes
	Being obese/very overweight increases your risk of Type 2 diabetes
	Type 2 diabetes is related to eating too many fats
	Type 2 diabetes is related to smoking
	A person who carries weight around his/her stomach has an increased risk of getting Type 2 diabetes
	There is nothing you can do to reduce your chance of getting Type 2 diabetes
	Type 2 diabetes is a curable illness
Type 2 diabetes is a preventable illness	
Do you know any potential negative consequences that may result from Type 2 diabetes? Can you please list them?	
Have you seen or heard any advertisements related to diabetes in New Zealand? Can you describe the advertisement?	

We needed to find participants' attitudes towards Type 2 diabetes regarding its importance and level of seriousness. The way we frame diabetes awareness campaign messages

is dependent on the way the population views the disease. Table 6 displays the questions asked to determine the attitudes towards diabetes.

Table 6: Attitudes towards diabetes

Attitudes Towards Diabetes	
<p>Using the 7 point scale where 1 is strongly disagree, 4 is neither agree or disagree, and 7 is strongly agree, please indicate the extent to which you agree or disagree with the following statements about Type 2 diabetes.</p>	Type 2 diabetes is a serious condition
	Type 2 diabetes is not a very serious condition
	How often do you think about diabetes?
	My chances of getting Type 2 diabetes in the next few years are great
	It is likely I will get Type 2 diabetes
	I feel I will get Type 2 diabetes sometime during my life

We also needed to find the population’s attitudes and intentions towards healthy eating to determine their willingness to convert to a healthier lifestyle. Table 7 shows the questions asked and analyzed to determine whether or not the population would easily adopt healthy eating.

Table 7: Attitudes/Intentions towards healthy eating

Attitudes Towards Healthy Eating	
<p>Using the 7 point scale where 1 is strongly disagree, 4 is neither agree or disagree, and 7 is strongly agree, please indicate the extent to which you agree or disagree with the following statements about healthy eating.</p>	Eating healthy food is essential to my well-being
	I enjoy eating healthy food
	I feel personal satisfaction when I eat healthily
Intentions Towards Healthy Eating	
<p>Thinking about your future breakfasts, lunches and dinners, please indicate how healthy these meals will be.</p>	Breakfast
	Lunch
	Dinners
<p>Approximately, how many glasses (250ml) of sweetened drinks do you drink per week (such as sports drinks, fizzy drinks, fruit juice, V, etc.)?</p>	

Table 8 represents the questions we asked participants regarding their temporal orientation. We asked temporal orientation questions to determine if the population thought about the immediate outcomes of their actions (present orientation) or more about the future

outcomes and consequences of their actions (future orientation). Knowing the temporal orientation of a population is helpful for determining whether to frame messages long-term or short-term for health awareness campaigns.

Table 8: Temporal orientation

Temporal Orientation	
<p>For each of the statements shown, please indicate whether or not the statement is like you. If the statement is extremely not like you please indicate 1, if the statement is extremely like you please indicate 7, and use numbers in the middle if you fall between the extremes.</p>	I consider how things might be in the future and try to influence those things with my day to day behaviour.
	Often I engage in a particular behaviour in order to achieve outcomes that may not result for many years.
	I only act to satisfy immediate concerns, figuring the future will take care of itself.
	My behaviour is only influenced by the immediate outcomes of my actions. (i.e. a matter of days or weeks)
	I think it is important to take warnings about negative outcomes seriously even when the negative outcome will not occur for many years.
	I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.
	When I make a decision, I think about how it might affect me in the future.

Lastly, we asked participants for their demographic information. We were able to group the population by demographic and compare knowledge and attitudes about diabetes as well as temporal orientation among groups. Results revealed knowledge gaps among groups and helped determine a target audience. Table 9 lists the demographic questions we asked participants.

Table 9: Demographics

Demographics	
Gender	Employment
Age	Tobacco Use
Household Income	Height (optional)
Highest Completed Level of Education	Weight (optional)
Ethnic Group	

3.2.3 Distributing the Questionnaire

We administered the finalized survey (Appendix E) to 401 people of the greater Wellington area from January 30 to February 21. We conducted questionnaires orally and face-to-face. Participants were able to read along with a copy of the questionnaire as we read the questions out loud. We recorded the responses from our participants on paper and then manually transferred them to Qualtrics. Questionnaires were conducted in the public areas of Central Wellington (Cuba Street, Wellington Railway Station, Civic Square and Midland Park at Lambton Quay) as well as the outer suburbs (Lower Hutt and Porirua). We conducted 334 questionnaires throughout Central Wellington, 30 questionnaires in Lower Hutt, and 37 questionnaires in Porirua. Central Wellington consisted of a mostly business class demographic, while the outer suburbs had a more diverse working class demographic.

3.2.4 Research Limitations

It is important to note that while conducting the questionnaire for the quantitative portion of this research, there were some limitations and constraints to our methods. These constraints were unavoidable given the resources we had, but we acknowledge that it may have an affect on the data we collect, particularly with bias.

The first limitation to our questionnaire was the sample population that the questionnaire was administered to. Obtaining permission to survey in particular public areas was very difficult, and because we used the street-intercept method of surveying, it was not possible to obtain a completely random sample. Surveying in a small number of locations means that we could not call our sample completely random, and although the demographics of our survey respondents are close to that of the New Zealand population, it is important to keep in mind that there may be a small sample bias. Thus, it is difficult to make claims about the “general New Zealand population”. Instead it would be more correct to make claims about those who responded to our survey.

Another limitation to our questionnaire was the format in which it was administered, orally and face-to-face. Oral administration may have produced a bias in the answers of our respondents because respondents may have altered their answers to tell us what they thought we wanted to hear. We most commonly experienced altered answers in the intentions for healthy eating portion of the questionnaire because it seemed as if people were embarrassed to admit their future meals would not be healthy.

3.3 Successful Strategies of New Zealand Health Advisories

The other focus of our project was to identify the most successful strategies utilized by health programs – those involving diabetes and others – aimed at changing lifestyle behaviors in New Zealand. To identify successful lifestyle campaigns, we interviewed representatives of various health awareness organizations.

3.3.1 Preparing for Interviews

We developed interview questions for various organizations to determine the goals and methods utilized by health awareness campaigns. We conducted standardized interviews in order to maintain comparable responses and utilized open-ended questions as well as probing questions to collect larger amounts of information while keeping the interviewee interested and involved (Berg, 2001). We asked the following seven questions that we felt would help us determine what makes a health campaign in New Zealand successful:

- What are the goals of (*name of organization*) in terms of the campaigns relating to (*obesity and Type 2 diabetes/nutrition and fitness/smoking*)?
- What has (*name of organization*) done to spread awareness and education relating to (*obesity and Type 2 diabetes/nutrition and fitness/smoking*)?
- Who was the target audience/s for the campaign?
- What elements of the campaign proved to be the most successful?
- What elements of the campaign proved to be the least successful?
- Do you have any recommendations from your experience for future awareness campaigns or programs aimed at preventing disease?
- Do you have any recommendations from experience for future awareness campaigns or programs aimed at promoting health?

(See Appendix F and G for the interview questionnaire and consent form respectively).

3.3.2 Conducting Interviews

Our sponsor provided us with a list of organizations as well as the contact information for each group we planned to interview. We met face-to-face with each interviewee. Table 10 shows the organizations we interviewed, their relation to our project, and the exact date we interviewed each.

Table 10: Organizations interviewed and project relevance

Organization	Organization Purpose	Relation to Project	Interview Date
Diabetes New Zealand	Promote diabetes awareness/support	Diabetes campaigns	February 12, 2014
Health Promotion Agency	Promote health, wellbeing and healthy lifestyles	Nutrition and fitness campaigns	February 24, 2014
The Quit Group	Promote smoke-free lifestyles	Public outreach	February 17, 2014

Interviews lasted approximately 30 minutes and were conducted between Thursday, February 12, 2014 and Monday, February 24, 2014. We asked the questions (see above/Appendix F) and recorded responses as well as took handwritten notes during the interview. Afterwards, we sent typed transcripts of the entire interview as well as summaries of the main points back to the appropriate organization for their approval.

4.0 FINDINGS

During our seven-week stay in Wellington, New Zealand, we administered over 400 surveys in the Central Wellington region and surrounding suburbs, and we interviewed staff of three health awareness organizations: Diabetes New Zealand, a diabetes awareness organization; the Health Promotion Agency, a health and well-being organization; and Quitline, an anti-smoking organization. To preserve anonymity, we have refrained from using the names of any organization's representatives. Through evaluation of both survey responses and interview comments, we identified numerous findings about the attitudes towards and knowledge of Type 2 diabetes in the New Zealand population as well as the effectiveness of knowledge-based interventions. In this chapter, we elaborate on our data analysis and findings that may serve as guidance for future diabetes campaigns in New Zealand.

4.1 Attitudes of the General Population

The questionnaire included several questions that were designed to assess the attitudes of respondents towards the seriousness of Type 2 diabetes, healthy eating, and the consequences of their actions.

4.1.1 Seriousness of Type 2 Diabetes

A majority – 89% – of the New Zealand residents that responded to our questionnaire believed that Type 2 diabetes is a serious condition. This finding was derived from an analysis of question 8 on the questionnaire (see Appendix E). Question 8 included numerous statements, including “Type 2 diabetes is a serious condition”, that the respondent could either agree or disagree with using the provided seven-point Likert scale, one representing strongly disagree and seven representing strongly agree.

Figure 6 shows the percentage of total responses that resulted for each point on the Likert scale when the statement “Type 2 diabetes is a serious condition” was prompted. Note that 89% of responses agreed – slightly agree, agree, or strongly agree – that Type 2 diabetes is a serious condition and only 10% of the responses were neutral (neither agree nor disagree) toward that statement.

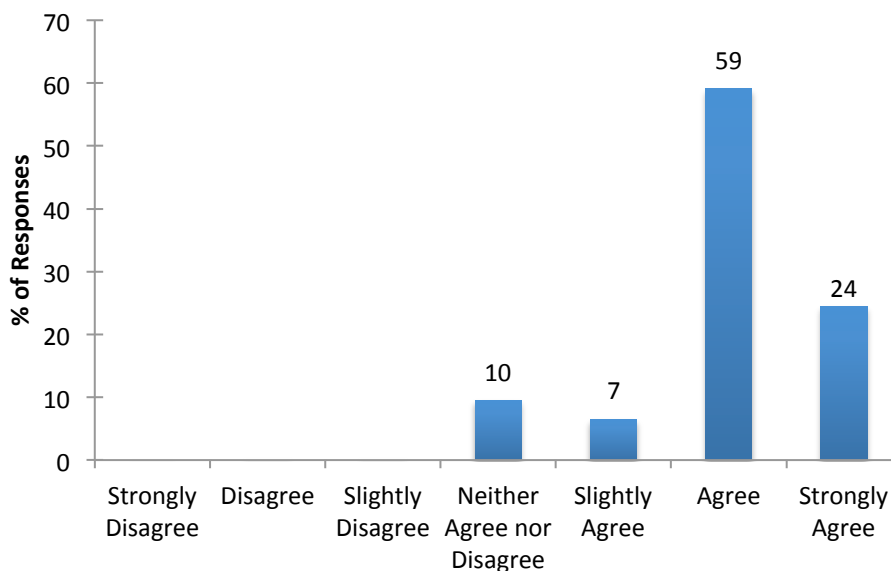


Figure 6: Percentage of responses to prompt: “Type 2 diabetes is a serious condition.”

4.1.2 Temporal Orientation

Seventy-five percent of the questionnaire respondents were temporally oriented towards the future. Temporal orientation refers to the attitude a person holds about how their actions affect their life. A person can be present orientated – primarily thinking of the immediate, short-term consequences of an action, or future orientated – considering the long-term consequences of an action. Question 15 of the questionnaire consisted of seven statements, four indicating future orientation and three indicating present orientation, derived from a previous study by Tangari, Folsø, Burton, and Kees on temporal orientation (2010). The questionnaire respondent could once again agree or disagree with the statement utilizing the seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7).

In order to calculate a respondent’s temporal orientation, we averaged the responses (1-7) for the three present statements and the four future statements. Whichever average was higher determined the temporal orientation of the respondent. However, if the averages for both the future and present questions were the same, then the respondent would be classified as neither present nor future oriented. Figure 7 shows the percentage of respondents that fell into each of the temporal orientation categories (present, future, or neither). Note that the 75% of respondents were future orientated, that is thinking about the long-term consequences of their actions, and only 23% of respondents were present orientated. Also, note that a very small percentage of respondents (2%) were categorized as neither present nor future oriented.

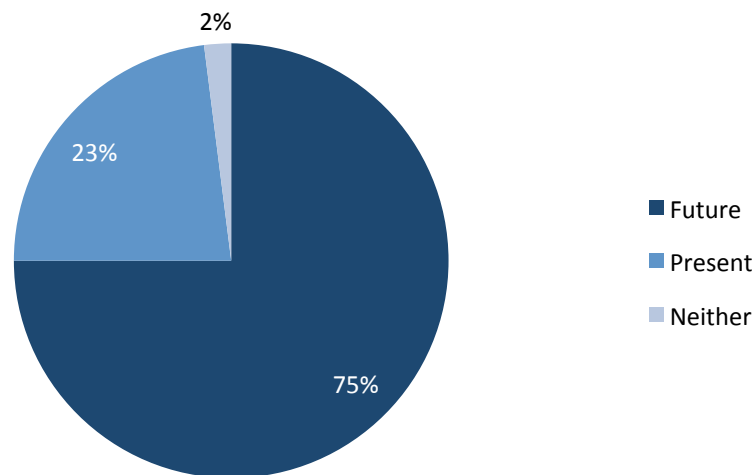


Figure 7: Percentage of respondents with each temporal orientation

4.1.3 Healthy Eating

A large majority – 98% – of questionnaire respondents had a positive attitude toward healthy eating, and believed that “Eating healthy food is essential to [their] well-being.” This finding was extracted from one of the responses to question 12 on the questionnaire (see Appendix E), which consisted of three different prompts meant to assess a respondent’s attitude toward healthy eating. The prompt we extracted this finding from read “Eating healthy food is essential to my well-being,” and the responses revealed if the respondents believed that healthy eating is important for their overall well-being. The word “healthy” could have numerous interpretations in the context of this question, but the goal of this question was to assess if a person has a positive attitude toward healthy eating and not if they actually are eating healthily.

Figure 8 shows the percentage of responses that resulted for each point on the Likert scale when the statement “Eating healthy food is essential to my well-being” was prompted. Note that 98% of respondents agreed – slightly agree, agree, or strongly agree – that eating healthy food is essential to their well-being, and only 2% were neutral (neither agree nor disagree) or disagreed with it.

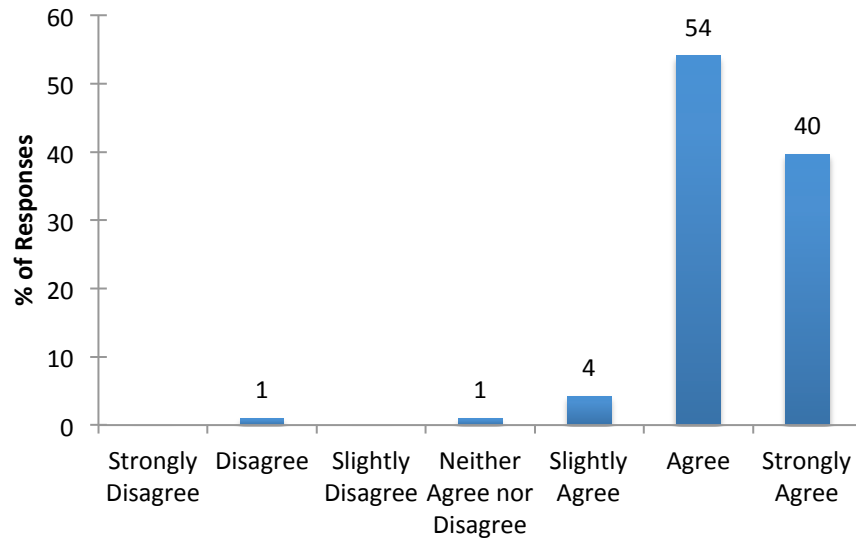


Figure 8: Percentage of responses to prompt: “Eating healthy food is essential to my well-being.”

4.2 Knowledge in the General Population

The questionnaire was designed with thirteen questions that assessed a participants’ knowledge about Type 2 diabetes. Respondents answered each of these questions on a seven-point Likert scale.

4.2.1 Baseline Knowledge

On average, the population represented in our survey answered 63% of the questions on diabetes knowledge correctly. This is approximately equal to answering eight out of the thirteen questions correct. To answer a question correctly the participant needed to answer slightly agree, agree, or strongly agree when the statement was true and needed to answer slightly disagree, disagree, or strongly disagree when the statement was false. We added the number of questions each respondent got correct and found the average number of correctly answered questions for the entire sample population.

There were some specific areas of knowledge regarding Type 2 diabetes that a majority of respondents answered correctly. For example, 93% of respondents knew that there are different types of diabetes, 91% of respondents knew being obese increases your risk of developing Type 2 diabetes, and 78% of respondents knew eating too many sweets increases your risk of developing Type 2 diabetes.

4.2.2 Knowledge Gaps

There are particular areas of knowledge regarding Type 2 Diabetes that the respondents of our questionnaire were either incorrect or unsure about. Question 8 of the questionnaire (see Appendix E) included numerous statements about Type 2 diabetes that the respondent could either agree or disagree with using the provided seven-point Likert scale – one representing strongly disagree and seven representing strongly agree. These statements were meant to test the respondent’s knowledge of Type 2 diabetes, and to find the gaps in knowledge regarding this preventable disease. The results of the questionnaire revealed that a few prompts resulted in widely varied responses, a large number of incorrect responses, or a large number of responses that were “neither agree nor disagree.”

Figure 9 shows the percentage of responses to the prompt “Type 2 diabetes is an illness in which you have less than normal sugar in the blood.” The correct response to this would be to disagree, because Type 2 diabetes is an illness in which you have *excess* sugar in your blood. Note in the figure that 45% of the respondents answered incorrectly, agreeing with the prompt. The percentage of those who answered incorrectly was higher than the percentage of respondents who answered correctly. Also, 25% of respondents were not sure how to respond to the prompt, and they responded “neither agree nor disagree.” The high variability of the responses to this question, the high percentage of neutral responses, as well as the majority of responses being incorrect indicate that this aspect of Type 2 diabetes is confusing to people and it cannot be assumed that people know that Type 2 diabetes is a disease where a person has *excess* sugar in their blood.

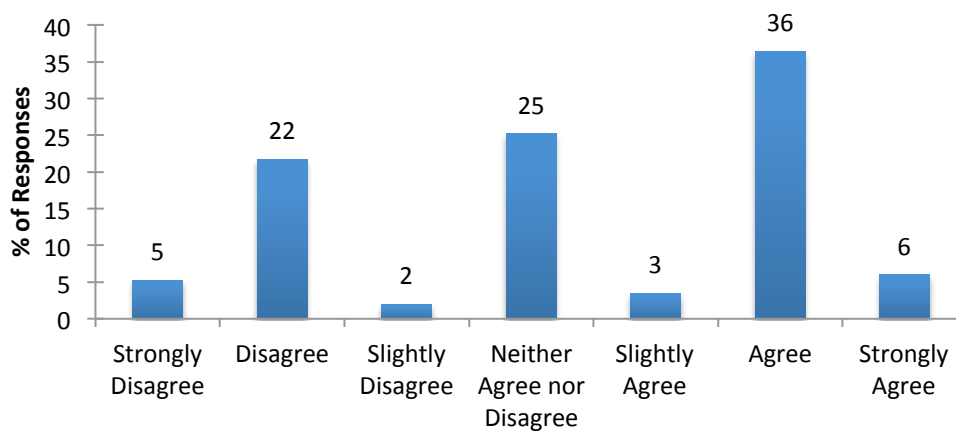


Figure 9: Percentage of responses to prompt: “Type 2 diabetes is an illness in which you have less than normal sugar in the blood.”

Figure 10 shows the percentage of responses to the prompt “Type 2 diabetes is related to eating too many fats.” The correct response to this prompt would be to agree, because eating fats increases a person’s chance of becoming overweight, which is a risk factor for Type 2 diabetes. Note in the figure that although a higher percent of responses to this prompt were correct (51%) as compared to the incorrect response (19%) there were still a very high number of responses that were “neither agree or disagree” (28%) indicating that the respondents to our questionnaire were unsure whether Type 2 diabetes is related to eating too many fats.

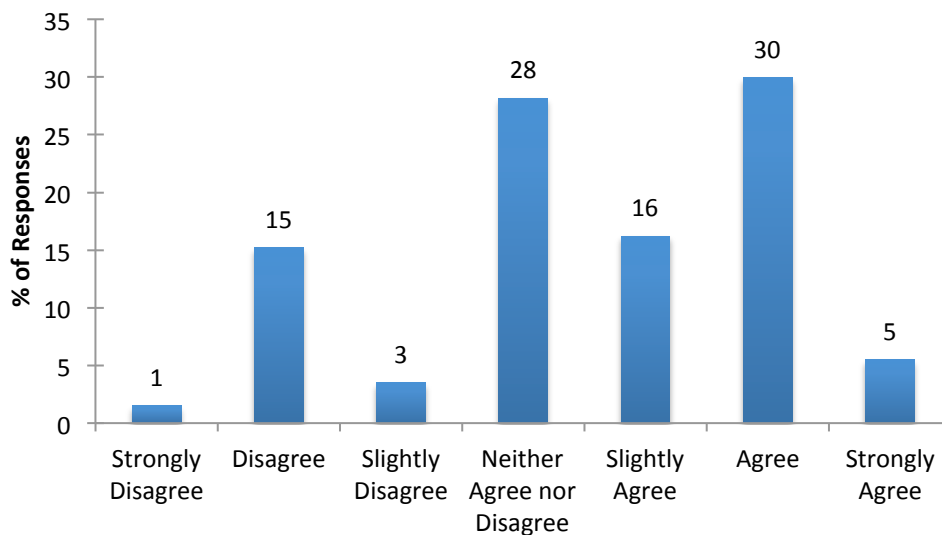


Figure 10: Percentage of responses to prompt: “Type 2 diabetes is related to eating too many fats.”

4.3 Knowledge by Subgroup

One of the major aims of this questionnaire was to determine if distinct demographic groups had different levels of knowledge about Type 2 diabetes. Question 8 on the questionnaire prompted respondents with thirteen different correct or incorrect statements related to Type 2 diabetes. Participants were then asked to respond on a seven-point Likert scale for each statement. For each statement, a participant could receive between one and seven points, one indicating the most incorrect answer and seven indicating the most correct answer. We determined participants’ overall knowledge scores by adding the points they received from responding to each statement as correct or incorrect – each overall score could range between thirteen and ninety-one points.

4.3.1 Income

Respondents with an income above NZ\$45,000 knew more about Type 2 diabetes than respondents with an income of NZ\$45,000 or less. We separated the populations' average knowledge score by participant income level. Figure 11 illustrates the difference in average knowledge score between participants whose household income is less than NZ\$45,000 compared to over NZ\$45,000. We separated people into these two groups based on the average household income in New Zealand – NZ\$44,000 – and our closest cut off point to that was NZ\$45,000 (Who earns what?, 2013). We performed a T-test between the two groups and found that their difference in knowledge was significant with 95% confidence (p-value < .05).

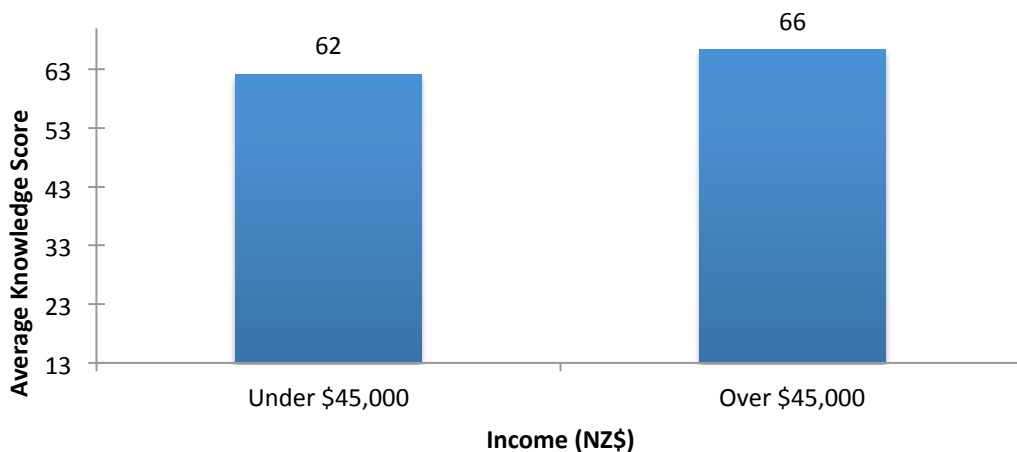


Figure 11: Average knowledge score of respondents by level of income

4.3.2 Age

Respondents age 40 and under knew less about Type 2 diabetes compared to respondents over 40. These two groups were determined because people over 40 have an increased risk of developing Type 2 diabetes (Risk Factors, 2013). Figure 12 exemplifies the difference in average knowledge score between the two groups. We performed a T-test between the groups and found that there was a significant difference between their average scores at a 95% confidence level (p-value < .05).

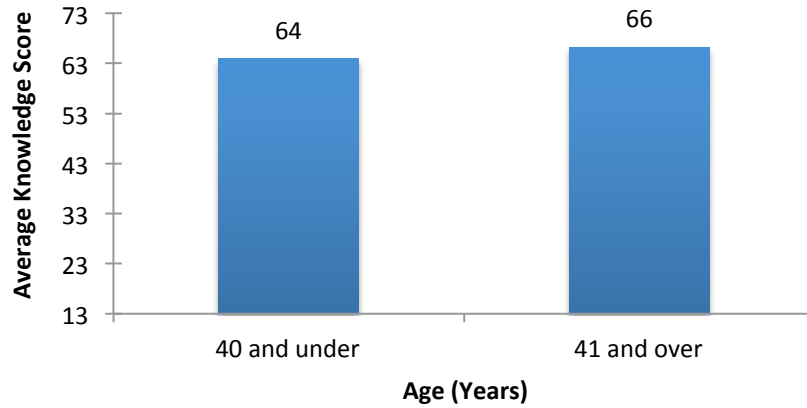


Figure 12: Average knowledge score of respondents by age

4.3.2 Ethnicity

Knowledge about Type 2 diabetes was significantly different between people of Māori decent compared to people of New Zealand European/Pakeha decent. We separated participants into seven different groups of New Zealand European/Pakeha, Māori, Pacific, Asian, European, North and South American, and other based on their ethnicity. Figure 13 demonstrates the average knowledge score for each ethnic group. We performed an Analysis of Variance test (ANOVA) and determined that the knowledge score for the New Zealand European/Pakeha was significantly different from the Māori at a 95% confidence level (p -value $< .05$).

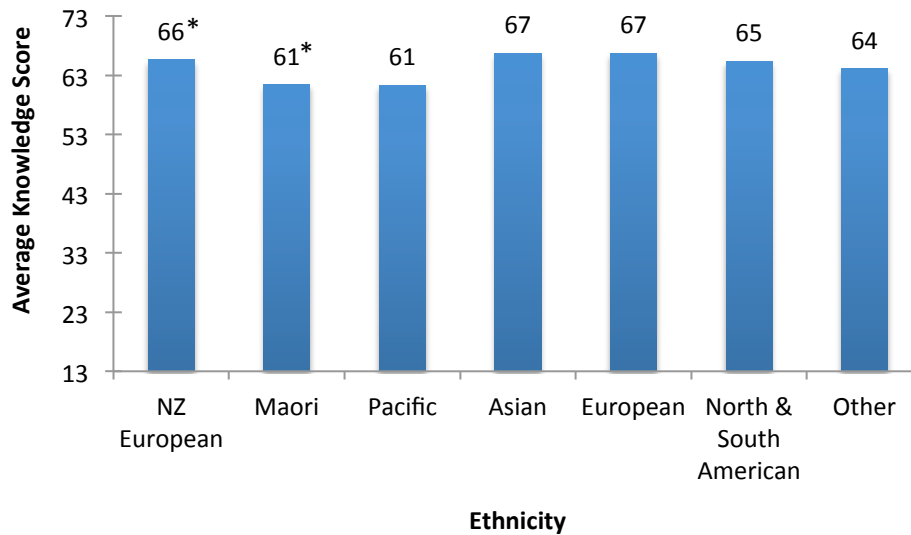


Figure 13: Average knowledge score of respondents by ethnicity

4.4 Additional Analysis

Unfortunately, due to complications acquiring statistical resources we were unable to complete all of our planned topics for analysis. We recommend exploring the following correlations:

1. An individual's perception of their risk of developing Type 2 diabetes (Question 9) and their intentions to eat healthily (Question 13)
2. An individual's temporal orientation (Question 15) and knowledge about Type 2 diabetes (Question 8)
3. An individual's temporal orientation (Question 15) and intentions towards healthy eating (Question 13)
4. An individual's attitude towards healthy eating (Question 12) and intentions towards healthy eating (Question 13)
5. An individual's BMI (Questions 24 and 25) and intentions towards healthy eating (Question 13)

4.5 Outreach

In order to raise awareness in a population, messages need to reach and make an impact on the public by taking into consideration the aspects of public outreach – framing, channels, and scheduling. Diabetes New Zealand, the Health Promotion Agency (HPA), and Quitline had varying opinions on reaching the public. (See Appendix H for full Diabetes New Zealand transcript, Appendix J for full HPA transcript, and Appendix L for full Quitline transcript). (See Appendix I for a summary of the Diabetes New Zealand interview, Appendix K for a summary of the HPA interview, and Appendix M for a summary of the Quitline interview).

4.5.1 Message Framing

The way a message is framed depends on the target population and resources as well as the story a campaign is trying to get across (Diabetes NZ, Appendix H). A positively framed message provides support and encourages viewers to maintain a healthy lifestyle. On the other hand, a negatively framed message utilizes consequences to introduce an intense feeling in the viewer. Negative messages are intended to make people stop to think about what could happen if they do not make healthy lifestyle choices.

Diabetes New Zealand utilized negative framing in its most recent “Will you be killed by your sofa?” campaign. However, to lessen the degree of harshness, Diabetes New Zealand also

utilized humor in this message: “[W]e don’t want to...market fear-based campaigns as more people switch off, so we try to use humor as a way to engage people” (Diabetes NZ Interview, Appendix H). The Diabetes New Zealand idea is to grasp the attention of clinical patients and make them stop to think about what could happen if they do not manage their diabetes.

The HPA promotes nutrition and wellness throughout the community through positively framed programs and promotions. The HPA uses positive framing in advertising programs and promotions such as “Breakfast Eaters”, which encourages and motivates people to eat a healthy breakfast every morning. The HPA offers support to the public and prefers to provide healthy solutions to problems. Providing actual solutions, such as meal plans, encourages people to change instead of telling them “you need to change”. “They aren’t necessarily looking for nutrition messages, they are looking for solutions, they are looking for meal solutions...” (HPA Interview, Appendix J). The HPA frames helpful messages as opposed to informative.

Quitline has experience with both positive and negative framing. Quitline develops campaigns that both encourage people to quit smoking as well as remind them that smoking kills. Quitline is currently launching a negative campaign – “Last Dance” – about a man who is dying of cancer and leaving his family behind. The campaign is designed to bring guilt to the viewer. At the same time, Quitline is also launching a positive campaign that supports viewers and encourages smoke-free lifestyles. “The aim is that the “Last Dance” will push people to think about quitting and the other will say that Quitline can help you – that these are nice people who will help you with quitting smoking” (Quitline Interview, Appendix L). According to Quitline, reaching both those who respond more to positive messages and those who respond more to negative messages can only be done through utilizing both types of campaigns simultaneously. Quitline also encourages “pulling at the heart strings” when addressing Māori and Pacific people. Pulling at the heartstrings includes utilizing children and real life people, especially Māori, in advertisements. The Polynesian population is very family-oriented and more apt to respond to messages they can relate to.

4.5.2 Channels of Outreach

A campaign can reach a population through an array of channels. The best channel is dependent on the resources of an organization as well as the target audience. Channels vary in price and in their effectiveness with various target audiences. Media channels can include

television commercials, radio advertisements, posters, online advertisements, pamphlets, newspaper/ magazine inserts, billboards, etc. (see section 2.1.1).

Our survey found that 37% of respondents answered “Yes” to the question “Have you seen or heard any diabetes advertisements in New Zealand?” (see Appendix E, Question 15). Those who answered “Yes” were then asked to describe the advertisement. The most common response –45%– was related to television advertisements, indicating that television advertisements reach the public more effectively than other media outlets.

According to Diabetes NZ, money is needed to utilize different channels and have a more effective public outreach. “We had...limited marketing of some pamphlets, some posters, and radio just over a couple of weeks, so we weren’t expecting a huge uptake...because we just didn’t have the money to have that reach” (Diabetes NZ Interview, Appendix H). Diabetes NZ relies on pamphlets, posters, and radio advertisements as less expensive channels of outreach. Advertisements direct viewers to the Diabetes NZ website, a phone number, and a texting service to seek further support.

The HPA conducts audience research before determining the channels of outreach they are going to use. For example, they have done extensive research on the Pacific population and have determined that although Pacific people do not typically have computers in their homes, they utilize Internet through public libraries and smartphones. In addition, the HPA tracks their target audiences’ most frequently listened to radio stations; Pacific Islanders frequently listen to the radio (HPA Interview, Appendix J). The HPA has also utilizes magazine inserts and trolley advertisements. The media advertisements direct viewers to the HPA’s website and Facebook page for more information.

Similarly to the HPA, Quitline utilizes channels that will best reach the target audience. For example, according to Quitline Representative 2 (Appendix L):

A lot of our the funding that we get goes on television advertising...that’s been the one that’s shown to make the most difference, particularly reaching our target are people in low socioeconomic populations, essentially poorer people, aged between twenty to forty-five because that’s where the majority of the smoking population is and with a focus on Māori and Pacific people.

Quitline also relies heavily on social media pages such as Facebook and YouTube to reach its target audience, and they acknowledge the Pacific population's frequent radio usage. Quitline does not utilize newspaper inserts because they believe the lower socioeconomic classes they target do not buy newspapers. Quitline does, however, provide brochures to people that direct them to further information.

4.5.3 Campaign Releases

The best time to release a campaign is when the people are most willing to listen. Throughout the year, the media is overwhelmed with messages to the public, and the public will only listen to the messages they want to hear (Diabetes NZ, Appendix L).

According to Diabetes New Zealand, the media is especially crowded around the holidays. Advertisements for holiday sales and gifts bombard people; therefore, it is not ideal to run a campaign at that time. Diabetes New Zealand believes the time of year best to run a campaign varies. The Diabetes New Zealand Representative mentioned "most people say do it in the New Year because that's when people are motivated or thinking about doing new things. Others say don't do it then because there's so much things on and people are distracted by the things, so it's hard to say" (Appendix H). Diabetes New Zealand chose to run their "Will you be killed by your sofa?" campaign in October. The campaign ran at this time because it corresponded to funding as well as when the posters and pamphlets were complete. October was a good time for Diabetes New Zealand because it was the prelude for Diabetes Awareness Week in November.

The HPA runs their "Breakfast Eaters" program all year long because it is mostly online. However, they do promotion events throughout the year. Promotions include "Back-to School" and "Be Fast with Breakfast". "Be Fast with Breakfast" is run in winter and is associated with sports such as rugby and netball. "So when it is coming up to winter and those sports are starting out we might have a promotion around 'Do you want to do really well with your sport?' – this is targeted to children directly – 'here's how eating breakfast will help you be fast'" (HPA Interview, Appendix J). The HPA promotions are scheduled to remind the public of the services the HPA offers throughout the year.

Quitline offers support to past, previous, and present smokers all year long. However, Quitline is the busiest around January – the time when people are making New Year's resolutions. Quitline does not advertise as much in December because they do not want to

compete for attention with holiday sales, and people are less likely to quit smoking during the stressful holiday times (Quitline Interview, Appendix L). “Monday is peak quitting time and that kind of drops off by Fridays or work wise and so we kind of place advertising in line with that” (Quitline Interview, Appendix L). Quitline also schedules their television advertisements to capture the attention of multiple types of people: employed, unemployed, shift workers, homemakers, etc. As a result, Quitline pays for commercials to run both during peak – 6:00PM to 9:00PM – hours as well as off-peak hours – daytime TV.

4.6 Funding

Funding is a crucial component for the distribution of health awareness campaigns and programs. Diabetes New Zealand, the Health Promotion Agency, and Quitline all identified budgets and funding as the main constraint on the effectiveness of their work.

4.6.1 Balancing Budgets and Campaigns

An organization may need to make trade-offs between budgets and campaign aims. For example, Diabetes New Zealand is a non-government organization. Therefore, it did not have an extensive budget to run its “Will you be killed by your sofa?” campaign. As a result, Diabetes New Zealand was only able to distribute pamphlets to clinical patients through District Health Boards as well as Primary Health Organizations. In addition, funding restricted poster locations – limiting locations to doctor offices but not public busses. Appearances of the pamphlets and posters were also limited by budget restrictions. “I think if we are able to get funding to run a more, to a much larger scale, we definitely would be able to bring in far more lessons as to what we need” (Diabetes NZ Interview, Appendix H). With a larger budget, Diabetes New Zealand might have been able to create more messages, utilize more channels, and have an appealing advertisement in the crowded media. However, they had to limit their target audience to only clinical patients and reduce their messages.

The HPA is a government agency that works with the Health Sponsorship Council and focuses on the health and well-being of the New Zealand population. The HPA follows government policy and receives a budget from the government each year. The budget covers the HPA’s programs and promotions that are meant to encourage good nutrition. The HPA also gives grants to community groups that encourage family fitness throughout programs within the community. However, the HPA budget is not extensive. “To do like radio promotions or media inserts or that sort of thing... you need a really significant budget just for it to get noticed, and

our budgets are quite small, so really in the last year...we haven't put a lot of money into media" (HPA Interview, Appendix J). The HPA chose to balance their budgets and campaign aims by limiting their public outreach as well as their promotions.

Quitline is under the Ministry of Health in New Zealand; therefore, they receive a great amount of funding to provide support and information about smoking and its effects to the public. Quitline can offer the public many services as well as advertise on a greater scale because of its extensive budget. Quitline runs multiple campaigns at the same time through many different channels. For example, they are currently running "The Last Dance" commercial simultaneously with a motivational support commercial. They can afford utilizing actors as well as higher quality marketing teams for campaign designs. In addition, they have the funding to evaluate and hold focus groups to test each advertisement. Quitline does not have to take away from the aim of their campaigns because they have a much, thus helping Quitline stand out in the crowded media.

4.7 Networking

Organizations that network and formulate connections with other organizations, companies, and people strengthen the effects of their organization within the community. Diabetes New Zealand, the HPA, and Quitline believe that connecting with other groups is beneficial and may increase resources as well as develop public recognition.

4.7.1 Benefits of Networking

Networking links organizations that can offer support, advice, and help to one another. Organizations have the power to choose whom they link and collaborate with; most likely, it with those whom share the same goal(s).

Diabetes New Zealand used to consist of twenty-one branches. However, in the past year those twenty-one branches unified to create a stronger structure to make stronger campaigns. "Previously we used to be a federal structure, so our initial office was legally separate, all branches were legally separate, which meant that coordination and so forth was more difficult" (Diabetes NZ Interview, Appendix H). Unifying branches eliminated the variation among the organizations and created one organization that would be easily recognized and more successful throughout the country.

The HPA, in the past year, started working with the Health Sponsorship Council and Alcohol Advisory Council. Collaboration among the councils strengthened the HPA and made

the HPA's "Breakfast Eaters" program possible. Networking also helps the HPA get their name out in the public. "[W]e might be the intermediate party where we're linking through other people who are doing promotions, and so we get them to promote our material and use our materials" (HPA Interview, Appendix J). For example, HPA links with supermarkets to promote healthy eating.

Quitline networks by forming links within the community. Quitline tries to connect with local festivals and events to get their name and face out in the community. "We engage...we go to events and just try and stimulate the communities to actually use our service. There are a few groups that don't even know what Quitline does, so it is vital that we get out there and promote our service" (Quitline Interview, Appendix L). The physical presence of Quitline at events familiarizes their name and face with the community.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The recommendations below are guidelines for an awareness campaign tailored to the cultural diversity of New Zealand based on conclusions drawn from our background research, questionnaire, and interviews. Suggestions include collaborating with other organizations, building public trust, choosing a target audience, simplifying the message, and developing an advertisement.

5.1 Collaboration

We strongly recommend that organizations seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand collaborate with one another.

We concluded from interviews with Diabetes New Zealand, the Health Promotion Agency, and Quitline that linking with other organizations that share similar goals generates more opportunities for all parties involved. Collaboration can lead to more creative and effective messages as well as more funding, which can increase the channels of outreach utilized as well as the overall quality of the campaign.

This recommendation prompts questions for future exploration such as:

- Which organizations are willing to collaborate with one another?
- How will organizations initiate collaboration?
- What portions of organizations' budgets would they be willing to expend on collaborative efforts?

5.2 Build Public Trust

We recommend that organizations seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand build public trust.

We concluded from our interview with Quitline that building public trust in New Zealand is essential for the success of health awareness campaigns. Organizations should create a personal connection with the public and become a familiar face because people tend to trust familiarity and it will increase the credibility of their future campaigns. In order to build this public trust, organizations should get their names and faces in the community by making appearances at public festivals and events of all genres.

This recommendation prompts questions for future exploration such as:

- How much would it cost to run a booth/table?
- How much time would need to be invested?
- Which events would be ideal to attend?

5.3 Define a Target Audience

We recommend that organizations seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand target the following:

- **Māori and Pacific people**
- **People with an income under NZ\$45,000**
- **People 40 years old and under**

Through our interview with Quitline, we learned that reaching the general population is exceedingly difficult, so it is crucial to define a target audience when making a campaign. We recommend targeting the audiences that are either most at risk for Type 2 diabetes or least aware of the disease and its consequences.

Our survey revealed that Māori respondents knew significantly less about Type 2 diabetes than NZ European/Pakeha respondents. Pacific respondents also knew less about Type 2 diabetes as compared to NZ European/Pakeha respondents. Both Māori and Pacific people also are more at risk of developing Type 2 diabetes and have a higher prevalence of the disease than other ethnicities in New Zealand (Metcalf, 2008).

Our questionnaire revealed that people with an income of NZ\$45,000 or less knew less about Type 2 diabetes than those with an income over NZ\$45,000. People with lower incomes also generally have less access to health care putting them at a greater risk for Type 2 diabetes (Agban, 2008).

Finally, our survey results show that people 40 years old and under knew significantly less about Type 2 diabetes than people over 40. The risk for Type 2 diabetes increases when an individual is over 40, so an organization should utilize preventative messages to target audiences under 40 (Sibley, 2013).

This recommendation prompts the following question for future exploration:

- How can an organization address all three demographics simultaneously?

5.4 Simplifying the Message

We recommend that organizations seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand simplify the message of their awareness campaigns.

Through interviews with Diabetes New Zealand, the Health Promotion Agency, and Quitline, we learned that simplifying the message of an awareness campaign is essential. These organizations stressed that in order for a campaign to be successful it must be straightforward and convey a clear message, so the target audience can absorb the important facts with a quick glance.

According to our questionnaire results, 93% of the people we surveyed were aware that there is more than one type of diabetes. Thus, organizations can include “Type 2 diabetes” in their messages without having to first establish that there is more than one type of diabetes because it is part of the baseline level of knowledge of the target audience.

Organizations should simplify the message of their campaigns by addressing the major gaps in knowledge within their target audience without overwhelming them with too much information. Our survey revealed that there were two major gaps in knowledge regarding Type 2 diabetes: people did not know that Type 2 diabetes is an illness in which you have more than normal sugar in the blood, and they also didn’t make the connection that Type 2 diabetes is related to eating too many fats.

This recommendation prompts questions for future exploration such as:

- What do you want your audience to learn from the campaign?
- Do people fully understand the message of the campaign? (Utilize focus groups)

5.5 Developing an Advertisement

Numerous factors need to be considered when designing and implementing a campaign, such as message framing, channel of outreach, and scheduling. We have developed guidelines for two different campaign options: one that requires unlimited resources and one that is possible with limited resources.

5.5.1 Unlimited and Limited Resource Options

This section includes a series of recommendations that apply to both the unlimited resource and limited resource advertisement options. Although both options require different budgets, certain aspects of message framing and scheduling are the same.

We recommend that organizations seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand create their awareness campaign applying the following guidelines:

- **Connect Type 2 diabetes with healthy eating**
- **Frame messages long-term**
- **Utilize Māori and Pacific as well as children**
- **Release advertisements in January**

Our survey revealed that 94% of respondents either agreed or strongly agreed that eating healthy food is essential to their well-being. Thus, an organization should frame their Type 2 diabetes awareness campaign around the idea that eating healthily can decrease a person's risk for the disease because the population may be more responsive to a message including a concept that they are already familiar with.

Our survey also revealed that the majority – 75% – of the population is future-oriented, indicating they consider the long-term outcomes of their actions. Organizations should frame their messages around the long-term outcomes of Type 2 diabetes and making healthy lifestyle choices because it may create a more relatable and impactful message.

We learned from Quitline that the Māori and Pacific populations generally respond well to symbols and people that they can personally identify with, so these things should be included in a campaign. Also, we learned these minorities are very family-oriented, so the use of children in a campaign may pull at their heartstrings and result in a more emotional response (Quitline).

We learned from both Diabetes New Zealand and Quitline that releasing a campaign in January tends to be the most successful. January is right after the holiday season and New Year's, so people are more willing to start fresh with a clean slate and fulfill resolutions, especially those pertaining to living a healthier lifestyle.

[5.5.2 Unlimited Resource Option](#)

This section includes a series of recommendations that apply only to an unlimited resource health awareness campaign. This option requires more funding and time, but it would be more likely to reach a greater amount people as well as surpass the crowded media to make its intended impact.

We recommend that organizations with unlimited resources seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand create their awareness campaign applying the following guidelines:

- **Utilize positive and negative framing simultaneously**
- **Utilize television and radio advertisements**
- **Run advertisements starting on Mondays during both peak and off-peak hours**

From our questionnaire, we concluded that the majority – 83% – of respondents either agreed or strongly agreed that Type 2 diabetes is a serious condition. However, the prevalence rate of Type 2 diabetes in New Zealand is still steadily increasing (IDF, 2013), necessitating a campaign message framed in a way that ignites a change in behavior. Our interview with Quitline revealed that organizations with unlimited resources should utilize both positively and negatively framed messages when addressing the public to reach both those who respond to encouraging words and those who need to feel an extreme emotion, such as fear or guilt, in order to change. The organization should also remember to frame these messages for the long-term, whether through a negative message showing the long-term consequences and complications of Type 2 diabetes or a positive message showing the long-term benefits of making healthy lifestyle choices.

Our questionnaire revealed that 45% of the population who had seen or heard a diabetes advertisement in New Zealand had seen or heard it on the television. Our interview with Quitline further supported television as a popular, effective channel of outreach, especially for the lower socioeconomic class. Organizations should conduct audience research to establish the most frequently watched television channels of their target audience and then run their commercials accordingly.

Our interviews with the Health Promotion Agency and Quitline also suggested the radio as a popular channel to reach the Pacific population. Organizations should conduct audience research for the radio, such as the Health Promotion Agency does, in order to determine the most frequently listened to radio station of their target audience, and then run their radio advertisements accordingly.

From our interview with Quitline, we also concluded that campaigns are more effective when they are started on a Monday. Monday is the beginning of the work week, and people are

more willing to change. By Friday, people are less open to change (Quitline), thus starting a campaign on a Monday will be more likely to attract the attention of the target population.

We also concluded from our interview with Quitline that airing television commercials and radio advertisements at both peak and off-peak hours is most successful in reaching the population. Campaigns aired during peak hours – anytime from 6:00PM to 9:00PM – are more likely to be seen or heard by the working class. Campaigns aired during off-peak hours – daytime hours – are more likely to be seen or heard by those who are unemployed, shift works, or homemakers.

5.5.3 Limited Resource Option

This section includes a series of recommendations that apply only to a limited resource health awareness campaign. This option may reach less of the target audience, but it would be less time consuming and less expensive.

We recommend that organizations with limited resources seeking to prevent Type 2 diabetes and promote healthy lifestyle choices in New Zealand create their awareness campaign applying the following guidelines:

- **Utilize positive framing**
- **Utilize posters**

We learned from our interviews with Diabetes New Zealand, the Health Promotion Agency, and Quitline that positive framing is the most successful strategy to use if only one campaign is being created. Positive framing focuses on providing support and emphasizing the positive effects associated with adopting the changes suggested within a campaign. Once again, due to the future-oriented nature of the target audience, these messages should be framed around the long-term benefits of maintaining a healthy lifestyle.

Our questionnaire revealed that posters were the second most common type of advertisement about Type 2 diabetes that people recalled seeing. Thus, for this limited resource option we recommend that organizations utilize posters in various public forums to reach the target audience. Potential locations for these posters include malls, public transportation, and in any area where there is high foot traffic.

5.5.4 Further Exploration

In order to decide what option is best suitable for the organization, it should evaluate its resources by considering the following:

- How much funding does the organization have?
- How much time does the organization have?
- What connections does the organization have?

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APPENDIX A – Child Obesity & Type 2 Diabetes Prevention Network

The Child Obesity & Type 2 Diabetes Prevention Network is a relatively new organization consisting of various health professionals. Members of the network include nurses, endocrinologists, public health members, and marketers among others. The network was founded with the intention of creating a link between the various professionals working with Type 2 diabetes to foster enhanced communication. The network's main goal is "to raise awareness and educate people about the preventable nature of chronic diseases such as Type 2 diabetes and obesity" (Childhood Obesity, 2013). The network created and implemented an advertising campaign consisting of posters on public buses which stress the unhealthy nature of sugary drinks. The goal of this campaign was to steer people away from unhealthy drink options in an attempt to decrease obesity and subsequently Type 2 diabetes. The campaign was for exploratory market research, and the Network focused primarily on investigating the consumers' perception of the posters. In the future, the network is seeking to implement more local campaigns regarding education about Type 2 diabetes and its prevention.

APPENDIX B – Diabetes

Diabetes mellitus, commonly known as diabetes, is a metabolic disorder, which refers to one's blood glucose levels. When someone has diabetes, their blood glucose, or sugar, levels are too high because the body is not creating insulin or the insulin is not working properly. This glucose comes from most foods we eat and provides the body with energy by entering our cells with the help of insulin. Insulin is a chemical-hormone created in the pancreas, which sits very close to the stomach, and helps glucose leave the blood stream and enter cells. If one's pancreas does not create enough insulin, the glucose will not enter the cells and instead stay in the blood stream. The excessive glucose will exit the body through urine leaving none for the cells. This will ultimately result in high blood glucose levels and cause prediabetes or diabetes (NDIC, 2013). Prediabetes occurs when people have blood glucose levels higher than average but not high enough to be considered diabetes. It also has no symptoms meaning that it may go unnoticed for many years (CDC, 2012).

Global Statistics about Diabetes

According to the International Diabetes Federation, about 382 million adults currently live with diabetes worldwide, while 46% of cases are still undiagnosed (IDF PowerPoint, 2013). In 2012, about 371 million adults worldwide were living with diabetes (IDF PDF, 2012), which means that the amount of diabetes cases has increased by 3% in one year. Therefore, diabetes is a growing global epidemic. China, India, and the USA have the highest amount of diabetes cases, while the Western Pacific has the highest prevalence of diabetes ranging from 23% in Nauru to 37% in Tokelau, two islands in Australian territory and New Zealand territory respectively (IDF PowerPoint, 2013). This may suggest that Pacific people are more prone to diabetes than other ethnicities since the global prevalence of diabetes was only 8.3% in 2012. With this 3% global increase in diabetes cases, countries all over the world are also spending more money on caring for these patients. A total of 548 billion USD was spent on diabetes care this year worldwide, where half was spent in North America alone. While these costs are exorbitant, the real issue is mortality due to diabetes. Figure B1 shows the percentage of deaths due to diabetes by region in people under 60 years old during 2013. According to the figure, the highest mortality rate is 76% indicating that diabetes has become a serious issue worldwide.

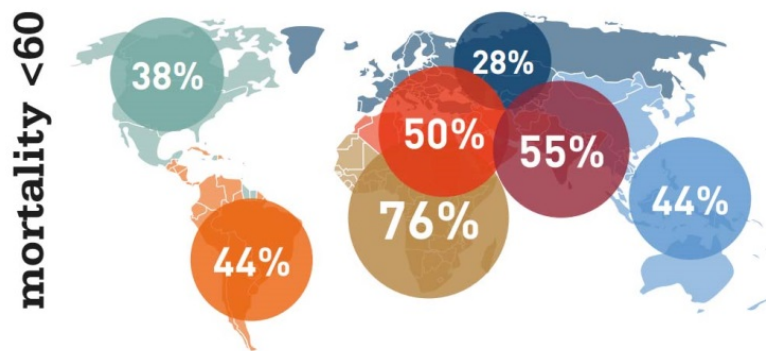


Figure B1: Percentage of deaths due to diabetes in people under 60 years old, 2013 (IDF PowerPoint, 2013)

The Difference between Type 1 and Type 2 Diabetes

Diabetes is classified as Type 1 or Type 2. A third type of diabetes, gestational diabetes, can develop in pregnant women due to a shortage of insulin (NDIC, 2013), but this section will concentrate strictly on the differences between Type 1 and Type 2 diabetes. The main difference between the two is that Type 1 is not preventable and Type 2 is related to lifestyle choices and, therefore, is preventable. It is vital for people, specifically New Zealanders, to understand this in order to decrease the amount of diabetes cases.

Type 1 diabetes is an autoimmune disease meaning that the body is attacking itself, in this case the insulin-producing beta cells. Therefore, individuals with Type 1 diabetes are not producing any insulin. As a result, these people need to take insulin daily in order to survive (MNT, 2012). Type 1 diabetes is not preventable and is not affected by one's lifestyle. Individuals can be healthy and still develop this type of diabetes. It is also commonly diagnosed in patients under 40 years old, making it *juvenile*, Type 1 diabetes's previous name (NDIC, 2013). Only 15% of patients with diabetes have Type 1 (MNT, 2012).

On the other hand, Type 2 diabetes is preventable and more commonly diagnosed for various reasons. Individuals with Type 2 diabetes are either not producing enough insulin or the insulin is not working properly. This may be due to unhealthy lifestyle choices and can occur at any time and age as a result of poor eating habits and lack of exercise. Appendix C explains in further detail how lifestyle choices can affect the development of Type 2 diabetes.

Risk Factors and the Cause of Type 2 Diabetes

A variety of factors can cause Type 2 diabetes. These include but are not limited to (Risk Factors, 2013):

Table B1: Factors that can cause Type 2 diabetes

Family history of diabetes
Overweight, unhealthy diet, physical inactivity
Increasing age
High blood pressure
Ethnicity (African Americans, Hispanic/Latino Americans, American Indians, Asian)

The main risk factor of Type 2 diabetes is obesity. When excessive sugar is consumed, the pancreas can adapt to this extra sugar by creating more insulin to help the glucose enter cells in the body. Eventually, the pancreas may no longer create enough insulin due to overeating and the pancreas's inability to keep up with the extra glucose (NDIC, 2013). Therefore, obesity directly relates to Type 2 diabetes, but with healthier eating habits, the disease is preventable.

Symptoms and Consequences

Although some patients with diabetes may experience no symptoms, they are more vulnerable to other life threatening diseases. "Diabetes increases the incidence of serious disorders affecting the eyes, kidneys, somatic nerves, autonomic nerves, feet, heart, brain, blood vessels, liver, skeleton, and other tissues, as well as of various cancers" (Gerstein, Werstuck, 71). These complications can also develop from the following symptoms (CDC, 2012):

Table B2: Symptoms of complications

Frequent urination	Tingling or numbness in hands or feet
Excessive thirst	Feeling very tired much of the time
Unexplained weight loss	Very dry skin
Extreme hunger	Sores that are slow to heal
Sudden vision changes	More infections than usual

Treatment and Prevention

For individuals already diagnosed with Type 2 diabetes, treatment provided by a doctor, as well as changes in one's lifestyle, can help prevent further complications and even lessen the disease's burdens. The main forms of treatment for Type 2 diabetes are healthy eating, physical activity, and blood glucose testing (CDC, 2012). In addition to these methods, many patients still need to take oral medication and insulin in order to help keep blood glucose levels at bay. According to the National Diabetes Information Clearinghouse, diabetes patients can also choose to hire a dietician who will help create a specific meal plan for the patient (NDIC, 2013). People

with diabetes do not need to eat certain foods in order to stay healthy but should simply eat less sugar. These foods should also be heart-healthy to prevent the possibility of heart disease later on.

Type 2 diabetes can be easily prevented through healthy life choices. “The Diabetes Prevention Program, a major federally funded study of 3,234 people at high risk for diabetes, showed that people can delay and possibly prevent the disease by losing a small amount of weight (5 to 7 percent of total body weight) through 30 minutes of physical activity 5 days a week and healthier eating” (CDC, 2012). Although the 3,234 people were randomly selected across the United States, the study mentions that 45% of the participants were from minority groups including Pacific Islanders. The participants were also all overweight and had prediabetes, two risk factors of Type 2 diabetes.

During the study, the participants were divided into groups with different diabetes treatments. One group in particular was the lifestyle intervention group. This group “received intensive training in diet, physical activity, and behavior modification” (NDIC, 2013). Their goal was to exercise 150 minutes a week while eating less fat and fewer calories. At the end of the study, participants in this group reduced their risk of developing diabetes by 58% (NDIC, 2013). This clearly proves that by eating healthy and exercising, individuals who are prone to Type 2 diabetes can delay or prevent the disease.

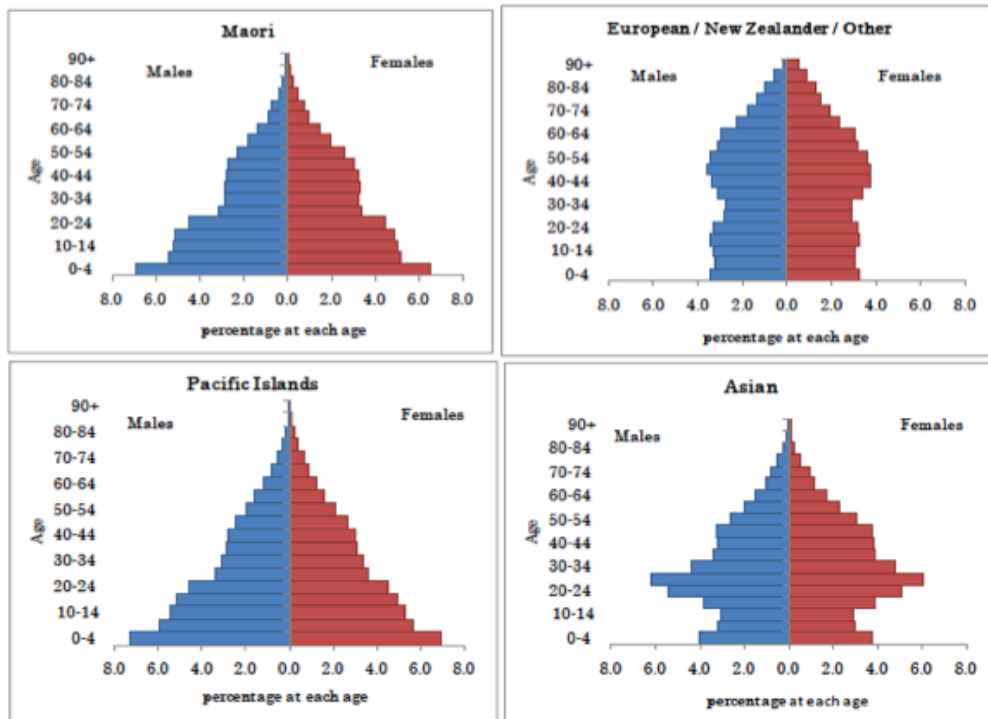
APPENDIX C – The New Zealand Population

New Zealand is a Southern Pacific country comprised of 4.47 million people, as of June 2013. It is a multicultural nation whose population consists of 67.6% European, 14.6% Māori, 6.9% Pacific – which includes those from Samoan, Tongan, Niuean, and Cook Island – and 9.2% Asian (Agban, 2008). The Māori are the Polynesian group indigenous to New Zealand, the first to establish in the country. Although the Pacific population arrived later to New Zealand, it is also of Polynesian descent; therefore, the Māori and Pacific are often grouped together to represent the entire Polynesian population of New Zealand. Māori and Pacific people share a comparable physical appearance (darker complexion and broader body type), similar socioeconomic stature, and related health risks susceptibility. As a result, Māori and Pacific populations have less access to resources within the country such as education and healthcare (Agban, 2008).

Socioeconomic Status

The Māori were the first to colonize in New Zealand in 1269. The original population was 255 people; consisted of 85 men, 85 women, and 85 children; and was 100% Māori. The Māori population intended to expand and utilize all the resources New Zealand had to offer, but the population never became as dense as the Māori had hoped. As Europeans began to migrate and officially settle in New Zealand in the 1800s, the Māori struggled to keep their land, and the population decreased due to the introduction of pathogens, diseases, and lack of resources (Easton, 2011).

Today, people of European descent make up the majority of the country, and they also dominate the social class. As a result, the Māori and Pacific populations are at a socio-economic disadvantage. The overall median age of the Māori and Pacific populations is only 23 years old, whereas the overall median age of the European population is 40 years old (Jackson, 2011). The Māori and Pacific populations have a relatively high birth rate, so an imbalance exists between earners and those needing support (Jackson, 2011). As a result, there is a younger working age population for the Māori and Pacific, and work becomes a priority over getting a thorough education. Figure C1 represents the distribution of ages among ethnic groups. Figure C1 shows that the Māori and Pacific populations have a large percentage of younger people than older.



Source: Statistics New Zealand (2010) Projected ethnic population of New Zealand, by age and sex, 2006 base - 2026 update, Series 6.
 † Based on multiple count ethnicity.

Figure C1: Age-Gender distribution graphs based on ethnicity (Jackson, 2011)

The younger Māori and Pacific populations continue to be at a disadvantage once they are employed because they more commonly receive jobs that do not induce the greatest pay. According to Sibley (2013), 53.7% of New Zealand Europeans commonly work as legislators, administrators/managers, professionals, technicians/associate professionals, and clerks, and the average hourly wages for Europeans is NZ\$18.94. On the contrary, the Polynesian population is more represented in the following jobs: trade workers, plant/machine operators, and labor/elementary service workers. The average hourly wages are NZ\$15.34 and NZ\$15.00, for Māori and Pacific, respectively. The difference in career paths can be attributed to the differences in education access for Polynesians compared to the European and Asian populations. According to Sibley (2013), 44% of Europeans go on to university, while only 18% Māori and 20% Pacific go past secondary school (Sibley, 2013). While the social history is complex and fraught with issues that have generated inequalities in socioeconomic status between the Polynesian and European populations, access to education is certainly an important

factor. The education imbalance between the Polynesian and European populations also has implications for lifestyle choices and decisions regarding health and well-being.

Health and Disease

The behaviors of the New Zealand population are reflective of their health and disease rate. Statistics New Zealand (2010) implied that technology and the Internet consume the majority of the country’s “free time” instead of healthier activities such as exercise. In addition to a lack of exercise, unhealthy eating habits such as frying food and consuming a carbohydrate-rich diet are common in New Zealand (Metcalf, 2008). The Māori and Pacific cultures are more likely to smoke (Moore, 2000) and have overall poorer eating habits (Metcalf, 2008). Although all the New Zealand cultures tend to eat similar foods, the Māori and Pacific cultures eat larger portions (Metcalf, 2008), which lead to higher weights. The poor habits adopted in different New Zealand cultures have increased risks of diseases such as ischemic heart disease, stroke, diabetes, COPD, asthma, and cancer. Figure C2 shows how dangerous obesity can be to the New Zealand population’s risk of diabetes. According to the figure, 14.2% of all obese people in New Zealand have diabetes (including both diagnosed and undiagnosed), compared to 2.5% of total diabetes for those at a normal weight. The significant difference indicates the correlation between obesity and diabetes.

Sex	Body Weight Category	Diagnosed Diabetes [†]		Undiagnosed Diabetes [‡]		Total Diabetes [‡]		Prediabetes [‡]	
		%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
All	Normal weight	1.4	(0.6, 2.2)	0.7	(0.2, 1.3)	2.5	(1.4, 3.6)	19.5	(16.1, 22.9)
	Overweight	4.6	(3.2, 5.9)	1.3	(0.5, 2.0)	5.9	(4.3, 7.5)	26.9	(23.5, 30.2)
	Obese	9.8	(7.5, 12.0)	4.0	(2.7, 5.3)	14.2	(11.6, 16.9)	32.2	(28.3, 36.2)
Men	Normal weight	2.0	(0.3, 3.7)	1.0	(0, 2.2)	3.5	(1.1, 6.0)	19.1	(13.2, 24.9)
	Overweight	5.2	(3.2, 7.2)	1.8	(0.4, 3.2)	6.7	(4.3, 9.1)	25.9	(21.3, 30.4)
	Obese	11.4	(7.5, 15.3)	3.9	(1.8, 6.0)	15.9	(11.2, 20.5)	35.8	(29.4, 42.2)
Women	Normal weight	0.9	(0.4, 1.5)	0.5	(0.1, 1.0)	1.7	(0.8, 2.5)	19.8	(15.4, 24.2)
	Overweight	3.8	(2.1, 5.6)	0.6	(0.2, 1.1)	4.8	(2.8, 6.9)	28.1	(23.2, 32.9)
	Obese	8.2	(5.9, 10.5)	4.1	(2.4, 5.8)	12.7	(9.6, 15.7)	29.0	(23.7, 34.2)

† Total number completing the survey = 4721; ‡ Total number providing a sample for blood analysis = 3348.

Figure C2: Diabetes stages based on weight

Type 2 Diabetes Prevalence in New Zealand

New Zealand is currently in the midst of a Type 2 diabetes epidemic in which the morbidity and mortality rates of the disease are increasing. Statistics show that 9.8% of the

Māori, 15.4% of the Pacific, and 6.1% of the total European population are susceptible to diabetes (Coppell, 2013). Prediabetes among the New Zealand population is also a concern of the country – 30.4% Māori, 29.8% Pacific, and 24.6% European are at risk (Coppell, 2013). In addition, Polynesians who are diabetic are two times more likely to die from diabetes-related causes than Europeans, which is a plausible reason for the low median age among the Polynesian ethnic groups (Moore, 2000).

Two scientific hypotheses have been developed to explain why the diabetes epidemic is more greatly targeting the Polynesian culture: the “thrifty genotype” and the “thrifty phenotype” (Moore, 2000 & Sukala, 2012). The “thrifty genotype” hypothesis correlates the Polynesians’ diabetes prevalence with their genes. The hypothesis predicts that because of natural selection, Māori and Pacific cultures have adapted genes for fat storage to keep the body warm throughout journeys, voyages, and lifestyle hardships during the colonization period of New Zealand (Moore, 2000). The “thrifty phenotype” hypothesis proposes that the phenotype, or appearance, of the Polynesian culture was altered pre-birth by certain environmental and nutritional factors (Moore, 2000). Studies favor the “thrifty genotype” hypothesis because recent research shows differences in the expression of diabetes-related markers, such as fasting insulin, insulin sensitivity, beta-cell function, and glucoregulation, in different ethnic genomes (Sukala, 2012). The combination of genetics and lifestyle choices such as unhealthy eating puts the Polynesian culture at a higher risk of developing diseases.

Access and Attitudes towards Type 2 Diabetes

The New Zealand population is composed of people living with diabetes, people living without diabetes, and people who may have diabetes but remain undiagnosed, unaware, and unhealthy. New Zealanders may develop a personal set of barriers as a self-bias, coping mechanism that reflects on their lack of action to get checked for diabetes. New Zealanders’ lifestyles may also contribute to their access to treatment, knowledge, and financial support for diabetes. As it has been noted previously in the “Socioeconomic Status” section of this appendix, the Polynesian culture has less education access and less economic opportunities access than the European culture. Therefore, it is common that the Polynesian culture is harder to reach as far as educating about Type 2 diabetes and receiving primary health care that can prevent the disease. In order to reach out and increase the health of deprived areas, cognitive skills, family and community support, self-esteem, and optimism need to be present amongst the community

(Pearson, 2013). A study conducted by Agban and colleagues (2008) suggested that a fully funded diabetes program in primary health care would improve and manage Type 2 diabetes rates, only if there was actual participation. However, a study conducted by Joshy and colleagues (2008) proved that the difference between deprived and non-deprived classes amongst cultures only affected the Europeans. More deprived Europeans were at a higher risk of diabetes, but in the case of the Māori and Pacific populations, both deprived and non-deprived classes, were at the same risk of diabetes.

APPENDIX D – Current Diabetes Awareness Campaigns in NZ

Diabetes awareness campaigns are currently being launched in New Zealand. Analysis and effectiveness research has yet to be done on these campaigns to determine their successes. Table D1 lists two of the campaigns currently being launched in New Zealand. The campaigns take very different initiatives regarding message framing and channels of outreach.

Table D1: Current diabetes awareness campaigns in New Zealand

Awareness Organization	Campaign Topic	Strategy	Framing Method
Diabetes New Zealand	“Will You Be Killed By Your Sofa?” Diabetes/ obesity awareness	Humor	Negative
Health Promotion Agency/ Ministry of Health	Heart disease/ diabetes awareness	Famous figure (All Blacks rugby player Wayne Shelford)	Positive

Figure D1 shows the poster utilized by Diabetes New Zealand in their “Will you be killed by your sofa?” campaign. The poster applies humor to the negative idea of death to soften the harshness of the message. The campaign is aimed at encouraging a more active lifestyle.



Figure D1: Diabetes New Zealand campaign poster (Diabetes NZ, 2013)

APPENDIX E – Knowledge of Type 2 Diabetes Research Survey 2014

Knowledge of Type 2 Diabetes Research Survey 2014

Hello, we are students doing a research study on health. This questionnaire will only take 5-10 minutes of your time. If you would like to take part, please take a moment to read this information sheet. There is a question on height and weight, which is optional to answer, but we would appreciate a response. Please note that this information cannot be connected to you once you have completed the survey. First, we would like to know if you are a New Zealand resident. Thank you for agreeing to take part in this study.

Q2 This research refers to Type 2 diabetes, were you aware that there are different types of diabetes?

- Yes
- No

Q3 Do you have diabetes?

- Yes - Type 1
- Yes - Type 2
- Yes - other/unspecified
- No

Q4 Do you personally know anyone who has diabetes?

- Yes - Type 1
- Yes - Type 2
- Yes - other/unspecified
- No

Q5 Do you have a family history of diabetes that you are aware of?

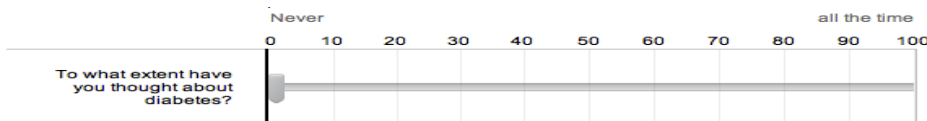
- Yes - Type 1
- Yes - Type 2
- Yes - other/unspecified
- No

Answer If Yes is Selected in Q5

Q6 What relationship are they to you?

- Parent
- Sibling
- Grandparent
- Aunt/Uncle
- Cousin

Q7 On a scale of 0 to 100 where 0 is never and 100 is all the time, please indicate



Q8 Using the 7 point scale where 1 is strongly disagree, 4 is neither agree nor disagree, and 7 is strongly agree, please indicate the extent to which you agree or disagree with the following statements about Type 2 diabetes.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
Type 2 diabetes is a serious condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is an illness preventable by vaccination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is a consequence of being frightened or of an intense emotional experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is an illness in which you have less than normal sugar in the blood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is an illness produced by poor functioning of the pancreas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating too many sweets increases your risk of Type 2 diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being over 40 increases your risk of Type 2 diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being obese/very overweight increases your risk of Type 2 diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is related to eating too many fats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is related to smoking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A person who carries weight around his/her stomach has an increased risk of getting Type 2 diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is a curable illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is not a very serious condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type 2 diabetes is a preventable illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Using the 7 point scale where 1 is strongly disagree, 4 is neither agree or disagree, and 7 is strongly agree, please indicate the extent to which you agree or disagree with the following statements about Type 2 diabetes.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
My chances of getting Type 2 diabetes in the next few years are great	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is likely I will get Type 2 diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I will get Type 2 diabetes sometime during my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 Do you know any potential negative consequences that may result from Type 2 diabetes?

- Yes
- No

Answer If Yes is Selected in Q10

Q11 Can you please list them?

Q12 Using the 7 point scale where 1 is strongly disagree, 4 is neither agree or disagree, and 7 is strongly agree, please indicate the extent to which you agree or disagree with the following statements about healthy eating.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
Eating healthy food is essential to my well-being	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy eating healthy food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel personal satisfaction when I eat healthily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13 Thinking about your future breakfasts, lunches and dinners, please indicate how healthy these meals will be.

	Not at all healthy	Mainly unhealthy	Slightly unhealthy	Neither healthy nor unhealthy	Slightly healthy	Mainly healthy	Very healthy
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lunch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dinners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Approximately, how many glasses (250ml) of sweetened drinks do you drink per week (such as sports drinks, fizzy drinks, fruit juice, V, etc.)?

- None
- 1-2
- 3-4
- 5-6
- 7+

Q15 For each of the statements shown, please indicate whether or not the statement is like you. If the statement is extremely not like you please indicate 1, if the statement is extremely like you please indicate 7, and use numbers in the middle if you fall between the extremes.

	Extremely not like me	Not like me	Slightly not like me	Neither like me nor not like me	Slightly like me	Like me	Extremely like me
I consider how things might be in the future and try to influence those things with my day to day behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Often I engage in a particular behaviour in order to achieve outcomes that may not result for many years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I only act to satisfy immediate concerns, figuring the future will take care of itself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My behaviour is only influenced by the immediate outcomes of my actions. (i.e. a matter of days or weeks)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it is important to take warnings about negative outcomes seriously even when the negative outcome will not occur for many years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I make a decision, I think about how it might affect me in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16 Have you seen or heard any advertisements related to diabetes in New Zealand?

- Yes
- No

Answer If Selected Yes in Q16

Q17 Can you describe the advertisement?

Q18 Gender

- Male
- Female

Q19 Age

- 18-25
- 26-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71+

Q20 Household Income

- Under \$15,000
- \$15,000 to \$30,000
- \$30,001 to \$45,000
- \$45,001 to \$60,000
- \$60,001 to \$75,000
- \$75,001 or over

Q21 Highest Completed Level of Education

- Less than high school
- High school
- Polytech
- University
- Other

Q22 Employment Status

- Employed
- Unemployed
- Retired
- Student
- Homemaker

Q23 Tobacco Use

- Never
- Current user
- Previous user

Q24 Height (optional)

Q25 Weight (optional)

Q26 Ethnic Group

- NZ European/ Pakeha
- Maori
- Pacific Islander
- Other _____

APPENDIX F – Interview Questions

Organization: _____

Interviewee: _____

Interviewer: _____

Date: _____

1. What are the goals of *(name of organization)* in terms of the campaigns relating to *(obesity and Type 2 diabetes/nutrition and fitness/smoking)*?

2. What has *(name of organization)* done to spread awareness and education relating to *(obesity and Type 2 diabetes/nutrition and fitness/smoking)*?

For each campaign mentioned

3. Who was the target audience/s for the campaign?

4. What elements of the campaign proved to be the most successful? (Prompt: Channels? Message Framing? Scheduling?)

5. What elements of the campaign proved to be the least successful? (Prompt: Channels? Message Framing? Scheduling?)

6. Do you have any recommendations from your experience for future awareness campaigns or programs aimed at preventing disease? (Probe for depth)

7. Do you have any recommendations from experience for future awareness campaigns or programs aimed at promoting health? (Probe for depth)

APPENDIX G – Interview Consent Form

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI



Research Consent Form

Health Promotion Research

In signing this consent form you agree with the following:

- I have been given and understood the explanation of this research project.
- I have had an opportunity to ask questions and have had them answered to my satisfaction.
- I understand that I may withdraw from this project before data collection is complete (June 8, 2014) and that my responses will be destroyed immediately.
- I understand that my name will remain confidential however I also understand that given the nature of the campaign description, others will be able to identify the organisation involved in the health promotion.
- I understand I will be sent a copy of my transcript for review and will have 3 days to provide feedback.
- I also understand the transcripts will be stored securely for two years after the research is completed and then destroyed.

I agree to take part in this research.

Signed:..... Date:.....

Name:

I would like to be sent a summary of the report. Please circle: Yes/ No

If you would like to receive a summary of the results of this research please provide your postal or email address.

APPENDIX H – Diabetes New Zealand Interview Full Transcript

Organization: **Diabetes New Zealand**

Interviewer: Nicole Bieniarz and Libbi Richardson

Date: 12 February 2014

Nicole: So what are the goals of Diabetes New Zealand in relation to Type 2 diabetes?

Representative: Ok, well so ultimately we represent and support people with diabetes, so that's all types. Specifically with people with, specifically with Type 2 diabetes is concerned. We would be looking to someone who has already developed it to give them the education and support they need to manage it to try and prevent complications. Or if they have prediabetes to try and provide the support and the same thing to support and the education but to try and other prevent Type 2 or slow the development. And to Type 2 and there's also general awareness raising we do to raise awareness on the risk of Type 2 diabetes, and encourage healthy lifestyles really so that they would rather prevent or delay it.

Libbi: So that's for like everyone? The whole population?

Representative: The whole population. Yup.

Nicole: Alright so, what has Diabetes New Zealand done to spread awareness and education?

Representative: So, one of the things that's probably contextually important to Diabetes New Zealand is that about a year ago now we unified. So we've got branches across the country, about 21. And previously we used to be a federal structure, so our initial office was legally separate, all branches were legally separate, which meant that coordination and so forth was more difficult. So we decided to come under one umbrella, which necessarily meant that for the last two years really, that was a huge focus for the organization was really making us strong and to care out campaigns and so forth. Not all branches and societies chose to come on board, so some for example, Christchurch chose to remain separate, and we obviously keep in close contact and work together. So what that really means is it's only really the last year after we unified and got that really strong structure that we thought now we really are in position to start

doing strong campaigns and so forth. So traditionally we've had an awareness week in November, which is when we've done the bulk of our awareness raising. Now obviously if you're doing it for just one week, your reach is going to be limited. So we identified the need to do more of a long-term diabetes awareness program that would have a go over many years and sort of go up and down throughout the year to try and keep it in the for front of people's minds. And that was what we developed as part of it, so that's obviously focused on Type 2. So this didn't receive any government funding. So this is purely, we received money from grant money to run this. So it's only Diabetes New Zealand, it is not a government campaign. And when we were deciding, ok, we know we start with a long-term diabetes awareness program, we thought we actually have to start from square one, just what is diabetes because we've heard from others over the years that when they try and do a prevention campaign, it falls flat because people just don't have that base level of knowledge of diabetes to be concerned. So at this first stage, so we launched, we developed a campaign quite from last year with a bit of money that we had, and we were trying to find money to run it properly nationally this year. So the purpose of that is just to get people interested in diabetes, so it is not necessarily, at the moment, asking them to, we're not asking them to take actual action to change their behaviors or anything like that. It's really just to get them to start learning about diabetes. And the idea is that over the years that if we can get enough funding we will evolve the campaign to start talking more about those health messages. So, we didn't have much money for that, and the idea really mainly was to develop a campaign platform that we would, really we had a little bit of money to do really limited marketing of some pamphlets, some posters, and radio just over a couple of weeks so we weren't expecting a huge uptake in the sense because we just didn't have the money to have that reach. But even in that month that we did it, over the couple of weeks we had a 30% increase from the same time last year. So really it really hit home in those leaflets we had about, I can't remember how many we had, but, you know, in the first two weeks, we basically had gone through 50,000, just from people ringing up. So there's definitely a demand for that type of campaign other than that we just do things such as... [takes out magazines and pamphlets]. So to give you a flavor, we, so obviously we've got leaflets, we've got lots of different leaflets that people can order, and we distribute about 250,000 of these a year, and that's to anything from clinics that give them out to people to just individuals themselves that are just being diagnosed and need to learn more to those who are at risk or various community groups. And we've also got...

Libbi: So that's like more for like diagnosed or prediabetes?

Representative: It differs. So we've got, so this one's sort of across the board. This one for example is for Type 2. There's a pamphlet on insulin, but it covers both people taking insulin that are Type 1 and people who are taking insulin that are Type 2 as well, so it's got both bits relevant of mention. But some of them cross such as this can be for anyone who has diabetes. Same with this one, this one's just talking about its risks, so there's the leaflet for that campaign. The feet one is for anyone, who it doesn't matter what type you have and so forth. And then we've got a quarterly magazine, which just, the point is that it goes to members and various different people to try and...it's full of tips on healthy living and managing diabetes.

Nicole: What about people that don't have diabetes yet and don't know anything about it, though?

Representative: Yeah, so in terms of awareness programs with that, that was part of our first front into it, in at least the last couple of years. So I've been here for about two years now, so I can mainly speak from, from my experience. And they might have, I mean we're an old organization, about fifty years old, so it might have been the case a couple years ago, they might have done more stuff about risk. But certainly in the recent future, this is really our first attempt to, to quite, yeah, to really go out there with a campaign for those at risk.

Libbi: Where did you put the posters?

Representative: We sent them to a whole lot of different organizations and asked them to put them up, so it was anything from PHO's...do you know what PHO's are? Ok, so New Zealand's got district health boards, such as really, yup, and so within that primary health care organizations, which is basically networks of GP clinics. And that's sort of how the funding works through DHBs and then through PHOs. So we send them to PHOs to distribute to clinics and so forth to put up.

Libbi: Do you ever think about like busses or anything?

Representative: No, we just didn't have the funding, unfortunately, so there wasn't really the only thing we've really had funding to do was a little bit of radio advertising and just to print

those. So we didn't have any distribution support, so we really relied on people just wanting them and ringing us up to order them, which worked, so there was actually a huge demand of it.

Nicole: Who was your target audience?

Representative: For [the will you be killed by your sofa] one, I'll have to double check, but it was something like 40 to 55 I think, around that band. Although I can't remember the exact number, but that's sort of the age group that we were looking at. Although I did hear from a couple of people that it really resonated with younger people as well. So when we were looking at some of our website hits, there was a younger age band, of about 25 to 35 I think, that were also a huge amount of the people checking it out, which, you know, that's great as well. So the other thing that has happened that we were involved with is the, so the Health Promotion Agency, do you know what that is? So they were in a, which you probably I think you might have already identified in your research, were in a "get a heart and diabetes check" campaign last year, which us in the health foundation were all involved in. And the point of that campaign was to try and get people identified as either prediabetes or Type 2 diabetes, for example, and to make sure that they can get the support they needed early on.

Libbi: Did you think that like you were trying to instill a fear almost with your message? Do you think it was like better than the ones that are kind of pamphlets like that were distributed?

Representative: Well we quite strongly didn't want to be feared by such. We tried to use a humorous approach, and I can probably say it better with the radio ads, which I can send you as well, those, which were sort of things like a news bulletin saying, you know, "a man lost a leg to a cheeseburger today" and that type of thing. Because we don't, you know, it's always sort of a big debate as whether fear-based campaigns work better than campaigns that have a positive message. And what we've done and have tended to thought of is we don't want to, you know, market fear-based campaigns as more people switch off so we try to use humor as a way to engage people. And our messages were to intend to try and say, you know, we have to say that diabetes is serious and we have to get that message out because people don't currently understand it but what we're trying to say rather than do something now or else you're going to die type you know those types of extremes. We're trying to say "you know, look, do something

now and you can continue living a healthy and active life". So we always try and push that type of, you know, positive messaging on top of it.

Libbi: Did you have a certain time frame or was it just as soon as you got the campaign done? Did you think like sending it out at a certain time was better, that people are more apt, like after the holidays to want to...

Representative: Yeah, well basically it went in October. And that was for two reasons. One is because it would be just before our awareness week so we would get the beneficial of crash and momentum of two. And two it was sort of fitted with the funding we go to do it and the planning time. I think, in terms of when to do it, when would be the best time to do a program. There are lots of different thoughts. Some people say, mostly everyone, say don't try to do it before Christmas because people aren't receptive. You know, most people say do it in the New Year because that's when people are motivated or thinking about doing new things. Others say don't do it then because there's so much things on and people are distracted by the things so it's hard to say.

Nicole: Did you find anything unsuccessful with your campaign?

Representative: We're sort of in a review of it now. We didn't really do, because we didn't have much money, we didn't really do enough marketing to really gauge perhaps what worked well and what didn't. Because none of it was able to be done at a level needed to really get a sense of how effective it is. We did that text, we tried that text thing, so we tried to give people multiple avenues to get information, so email, text. Definitely the website had a great hit. We didn't get many texts in but again it's hard to tell whether or not that's just because the avenue is not effective or just because we weren't able to run the campaign at a large enough scale. I think if we are able to get funding to run a more, to a much larger scale, we definitely would be able to bring in far more lessons as to what we need.

Nicole: That's kind of what you recommend? Just more funding? What else would you recommend for future ads?

Representative: It's all about funding really. You know, we know that it's an engaging idea and make it work. The key is to be able to run it at a level that people can hear a message because,

you know, the lines get crowded. There's lots of different messages from lots of different sectors, including health. So really to get cut through, it takes a considerable effort that requires funding so you need quite a bit to be able to do it. Because otherwise what happens, I think, is you run a campaign at a lower level and you tend to only engage those who are needing to/wanting to listen. But really what we're trying to do is we need to raise it with the general population. And that costs a lot of money.

Libbi: Do you think there's anything that like is difficult for the general population to understand? Do you focus on wording to make it easier? Because it's such a complex subject.

Representative: Diabetes is complicated and it's complicated particularly because there are different types so the prevention campaign is purely about obviously about Type 2. And so there's often the question of when you're doing a campaign for example do you say "let's try and prevent diabetes" which is the more concise line and more likely to engage. On the other hand people say "no you need to be specific with about Type 2" because it's not fair to the people with Type 1 to be creating the idea that Type 1 can be prevented when it can't and so forth. So there's that messaging issue of how do you and the other problem you face at the moment is if you specify Type 2, people just get more confused because they don't even know what diabetes is let alone Type 2 is. But you have to be fair to the whole population of people with diabetes. And the other thing is the treatment of it is not straight forth, so with some maybe other long-term conditions, may just be more about just taking pills if you're just looking into hypertension or something like that. Obviously people, you know, have a hard time managing this and getting the right medication regime, but it really, and their lifestyle effect is obviously really in that but it is about taking pills and so maybe not fair to say but maybe it's more complicated when you face diabetes than some of the others because it's not just about doing A, B, C, and D, and it can differ with any one person. And even people say "oh, if you have Type 2, how do you treat it?" Well it differs for absolutely everyone. Some people can do it in diet, obviously diet and exercise. Others need pills, others need insulin so it's, there's no, it's very hard to find a typical Type 2 story because everyone's experience will be quite different. And the other thing with Type 2 as well is obviously there is a lifestyle language is really clear, but there is not a lifestyle language necessarily with everyone that gets Type 2 diabetes, and so there's also messages coming through, so you have to be careful saying "these are the absolutely causes of Type 2"

because that is not the case for everyone and the messages are on the way as to the exact causes are and why some people get it and what we think the next level is, different factors and so forth. And there's also needing to be very careful about the messaging so when we talk about Type 2 diabetes can be prevented, again, well for some people but maybe not for everyone so, you know, you'll have people who have done everything that they could but develop it anyways. So it's all those just being careful about the messages that we portray with it that's completely accurate.

Libbi: Do you see a problem with the self-positivity bias a lot among like the population, just like people ignoring messages?

Representative: Yeah, I mean just anecdotally talking to other charities in the sector who are trying to raise awareness about their particular cause, you know, absolutely there's an issue of...and part of it is because people are bombarded and we all, all of us can tell by personal experience when you walk out of the door and there's a million messages in a million different ways to you, so it's, and you do just need to block a lot of it out because the world is so cluttered with it, so it is hard to get people to pay attention. And it might also be with some people as well just not wanting to hear it and not wanting to listen particularly if they are scared about it.

Libbi: Have you thought about temporal orientation? (Explains temporal orientation) Do you try to frame it towards people who are living in the moment or those who are thinking about the future?

Representative: No, I mean we haven't really. I mean basically what we've done with messaging has been with marketing people of just identifying the target audience and trying to understand the way they respond to media messages and then just trying to.

Libbi: Do you have any questions for us?

Representative: No, not really, but we are looking forward to hearing about this research. It's quite good timing as well because as we start to do more in the area of prevention it would be interesting to have a base mark as to what the current levels are and then in a year to two years as campaigns start hopefully if we can get funding to having an impact.

Libbi: Yeah it is very interesting the information we are starting to gather.

Representative: What is happening in New Zealand as well is so, I think, everyone probably expect to have a low public knowledge of diabetes, but over the last few years there's been quite a change in the sense that diabetes has connected to the media more and more and more and more. So I think my guess would be that people had heard about it, but lots of feedback we get is that even if a lot of them have heard about it, people don't think it is that serious and don't know what causes it really and when they do say what causes it, it's not necessarily true but also don't really worry about it because they think "oh" and that's something to try and address.

Libbi: You gave us a lot of information that is very helpful. Thank you.

APPENDIX I – Diabetes New Zealand Interview Summary

Organization: **Diabetes New Zealand**

Interviewers: Libbi Richardson and Nicole Bieniarz

Date: 12 February 2014

Diabetes NZ:

- Supports all types of diabetes
- Education for all
- Unified 21 branches a year ago
 - Stronger structure
 - Stronger campaigns
- Non-government
- Work with HPA → encourage people to get a heart and diabetes check

Will you be killed by your sofa?:

- 50,000 pamphlets to clinics/ individuals
 - Used DHBs and PHOs
- Funding didn't allow for bus posters
- Utilize humor/negative framing
- Targeted 40-55 year olds
 - Number of 25-35 age group looking at website was high
- Gave people multiple ways to obtain information
 - Website = 30% increase
 - Text → not too many sent
 - Email
- Advertised in October
 - Before awareness week (November)
 - Depended on funding/planning time
- Success of campaign still in review

Other Key Notes:

- Best time to do a campaign → not before Christmas
 - After New Years
- Crowded media environment
 - People are bombarded with information
 - Some ignored → may scare people
 - Need to appeal to public
 - Keep education to a level people can understand
- Diabetes is complex
 - Multiple types make it complicated
- Type 2 varies for everyone → difficult to make a story
 - Treatment
 - Conditions
 - Risk factors
- Temporal orientation
 - Varies
 - Not taken into complete consideration by Diabetes NZ

Other Organizations:

- Diabetes Project Trusts
 - South Auckland
 - Programs
- Diabetes New Zealand
 - Auckland
 - Cooking classes
 - HOPE

APPENDIX J – Health Promotion Agency Interview Full Transcript

Organization: **Health Promotion Agency**

Interviewer: Nicole Bieniarz and Libbi Richardson

Date: 24 February 2014

Nicole: Alright, so what has the HPA done in terms of campaigns relating to health and fitness and nutrition?

Representative: Ok, so we have a historic programme. The Health Promotion Agency came from Health Sponsorship Council and the Alcohol Advisory Council. So we're 18 months old. So when the health sponsorship came across to the new agency, they had a program called "Breakfast Eaters". So that was targeting breakfast consumption and children. And so in terms of doing that, we focused on families, and we have, not so much last year because we...I'll get to that, but we have a website, Facebook pages where we provide some easy email solutions for families, focused on breakfast, focused on breakfast consumption. And then we do some, historically we've done some media works. So we've done some radio promotions, we've done some inserts in magazines; we did a big promotion last year with one of the big supermarket chains. We were linked with some supplies around breakfast messaging and have messages on trolleys, and store radio advertisements and specials on, you know, health cereals like Weet-Bix and those sorts of things. So it's been a historical focus, and last year the government asked us to refocus looking at, you know, maternal-infant nutrition because in this country, that's been a little bit of a focus around nutrition. And so during the last year, we've been in pretty much development planning phase and what we're going to do to address maternal-infant nutrition. And so we're, we're just starting to shape up that work now. So we're looking at breakfast consumption and beverages can be one of the focus areas. We're going to do quite a lot of work on family meal solutions, but it's going to be broadened away from breakfast. And that will be very much an online platform which we already have huge engagement with, looking at infant feeding, introducing first foods to children and when children are full, what are the cues they give to tell us they're full and reducing secondary behavior, and some of that will be focused on work places rather than families.

Libbi: Do you do anything like encouraging like going for a walk during the day?

Representative: Not so much, we have, what we've been doing is in the last year, what we did was initially, because there's only ten of 3 of us in the initial program, so we reach out to the community, so we have to work with other people in the community to try an increase capacity. So last year we funded 20 different community organizations to engage in on the grant programs. And so, quite small grants, and some of them have done more with the money than others. Mostly they've done a lot because what we've found in community organizations, they're really, really effective at using their money. And so they have been doing a whole lot of stuff and the grants all focused on being active with your families. And that ranged across a huge range of things. Some of them, like one group, have used the money towards pregnant young teenage pregnant mothers to get them active, so money was invested in those sort of programs. One here in the Hutt has looked at, you know, working with the community on a whole raft of different walking groups and all sorts of things, all sorts of activities. One group in Tauranga has looked at, had 80 low income mothers swimming with their babies, did swimming lessons with them, play groups in front yards, and all of our work focuses on, because we have a decent amount of money. We focus on Māori, Pacific, and low income families. So all of our grants focused on working with low-income families. Some of the money went to Marae groups who did sort of boot camps around the Marae, Pacific churches; we have done grants with Pacific churches. They've done sort of like different Zumba fitness things at the churches, all sorts of things.

Libbi: Do you see them reacting to it, like how do you draw their attentions specifically? Do you do anything different?

Representative: We don't, we don't do any, we haven't done any campaign or initial advertising campaign or maybe a strategy around physical activity. So we focus through grants with community organizations. And then for each of those grants we've given them media releases and things like, you know, they call them Swiss media releases. So they're full of holes and then people sort of put in their own names and their activities. So each of those groups have done the media in their own community to engage people in those activities.

Libbi: Do you just target the like Māori and Pacific for the nutrition, too, or is that everyone?

Representative: Sorry, nutrition, so historically we've only been nutrition. And in the last year we've included physical activity and everyone can engage in that, but our target audience was the Pacific. So the channels we used and where we put out information and target our programs are the places with predominantly Māori and Pacific families will be. So that's, does that answer that?

Libbi: Yea.

Nicole: Ok, so what have you done to spread awareness and education relating to fitness and nutrition?

Representative: Mainly it's the online platform at the moment. We have done some radio campaigns in the past, but at the moment it's been online and also linking with other providers. So we're producing at the moment a range of resources that help providers can use with their communities. So we might be the intermediate party where we're linking through other people who are doing promotions, and so we get them to promote our material and use our materials. And, you know, some of the time our stuff gets rebranded with other organizations logos and we're quite happy with that. That's part of, you know, that's part of a job. So our online platform in terms of engaging people, we have, so we have this online space which is, you know, posts and people can engage what the, and quite, we average over a million hits a month on that online space. In the last couple of months we've hit some really high numbers on that – we're not quite sure why. And so there's the number of hits but also we get a huge number of engagement rate and a huge number of likes and they're growing so people are – if we put a good post or something, we get a lot of engagement on it, a lot of people comment on it. A lot of people say they use it; they're forwarding it along to friends. Yeah, so that is how we use that.

Libbi: Do you have a fear that some people or that people don't have Internet access or they can't use the online platform or low-income might not have a computer?

Representative: Yeah, well they don't have computers but our data tells us that actually what we've got is for low-income groups is they might not have a computer in their homes but they have smartphones. They're using, so they're accessing. We're not concerned about that; we know, particularly, Pacific families are very very high users of Internet. They might not have a

computer in their home, and they might not have computer access, but they use it in libraries and other public spaces or they're smartphones, so that is not a concern for us.

Nicole: So what proved to be the most successful for like did you use positive framing? Negative framing?

Representative: All our stuff is really positive and if you looked at our Breakfast Eaters work page – if you want to go and have a look at the page. What you'll find is eventually no nutrition messaging on it. We've done quite a lot of audience research and we did a big project last year looking at it – and this research was done with our Māori, Pacific, and low-income families – we what we know is that people who are looking for the stuff we do, they aren't necessarily looking for nutrition messages, they are looking for solutions, they are looking for meal solutions, so you don't go looking for answers around physical activity with your nutrition, you're looking for it in different places. We haven't dealt with the physical activity stuff yet because it is new for us. We haven't got there or our grounds. We're shaping that up that at the moment. We know that nutrition, they are not looking for nutrition messages, they are looking solutions so it's very positively framed, and it's just meal solutions. So you won't go on that sight and find anything about being healthy there. What we're giving them are very simple recipes. They've got about maybe three or four ingredients. They're low cost, and they're easy to do, so I think it's really positively framed.

Libbi: Do you try to use, when you are trying to reach the Māori and Pacific people, do you try to use Māori and Pacific people in your programs?

Representative: We don't use people, we just use the recipes. It's just solely recipe information.

Libbi: So how do you try and attract the Māori and Pacific?

Representative: Through the channels that we use and the way that we advertise, through the online advertising so we specifically have a lot of information about where the populations we are targeting go for information so we target all that stuff through those channels. So when we do go and we do do advertising – we haven't done a lot for this program this last year because our budget wouldn't allow it – but for other work we do at HPA, we know what radio stations they are listening to. So we'll channel our work to those stations for the population and the age

groups. So, for example, if we wanted to target Māori, young Māori people, teenage Māori people, we would look for probably Māori female, some of the stations we know they're listening to if we would like to radio. Might not want to do radio. I don't know, it depends; it just depends on what we're doing and where the people are and what we're trying to reach them with.

Libbi: You run the nutrition and the Breakfast Eaters all year round?

Representative: Yeah, yeah, yeah. Everything is ongoing. Although sometimes we'll have a promotion like for Breakfast Eaters, for example, like Back-to-School. We're going back to school, start the year and they're thinking about stuff like that so we'll run a promotion at that time of the year. We've done ones around winter promotion, around sport. Like rugby and netball are really popular around here, like sports and so when it is coming up to winter and those sports are starting out we might have a promotion around "you want to do really well with your sport" – you know, this is targeted to children directly – "here's how eating breakfast will help you be fast." I think we called that one "Be Fast for Breakfast."

Nicole: What do you think has been the least successful throughout all of this?

Representative: I've only been here for a year, so it is hard for me to say. I can't really comment on that. I think we're kind of, we work in government, we are a government agency, so we have to align with government policy and so we don't perhaps have the freedom that non-government agencies have and that might limit some of the things we might be able to do or the areas we work with because we do have to align with government policy. But yeah, I can't comment on what hasn't been successful because I haven't been here long.

Nicole: Do you have any recommendations from your experience for future awareness campaigns or programs aimed at preventing...?

Representative: I think that one of the things that limits our work perhaps is not unsuccessful but limits our work is we have quite some budgets and so to do like radio promotions or media inserts or that sort of thing – we were just talking about this this morning – you need a really significant budget just for it to get noticed. And our budgets are quite small. So really in the last year, we're trying to develop some other work, we haven't put a lot of money into media.

Libbi: Would you say that when you do your promotions do you show your face in the public when you do the promotions? Or do you just do the radio and online things?

Representative: Breakfast Eaters isn't branded with HPA branding. Is it? I don't know. I can't remember. I have to think about it. We generally – that's an interesting one. How do you brand it? Like some of the programmes are very non-government brands, and as an organization, we have to put an HPA brand alongside it, but I think we try to keep that fairly discrete because sometimes the government brand can be a really good thing because people will look at it and go "yeah, that's really credible, that's really credible organization because that's government brand" and sometimes that will be a turn-off depending on your audience. You know, young people might not like the government brand. They might think that sort of might not appeal to them. Just that depends on what we're doing and where we are going. But yeah the Breakfast Eaters stuff is very much it's an established brand in its own right, quite separate from Health Promotion Agency brand. Yeah, that's quite interesting, the branding thing. And I think we are still trying to resolve it because with the previous organization, the program brand stood alone so the smoke-free brand stood alone without the Health Sponsorship brand because most people didn't know what Health Sponsorship Council was because they never saw those brands and some of the program brands but with the new organization we're in now, we have to co-brand with the agency brand and so it's kind of interesting really. I don't know how much impact that has on people.

Libbi: Do you have any questions for us?

Representative: No, I don't really.

APPENDIX K – Health Promotion Agency Interview Summary

Organization: **Health Promotion Agency**

Interviewers: Nicole Bieniarz and Libbi Richardson

Date: 24 February 2014

Health Promotion Agency:

- Work with Health Sponsorship Council
- Breakfast Eaters program
- “Be Fast with Breakfast”
- Focus of family meals
- Utilize website, Facebook, magazine inserts, radio clips
- Will try to interact with supermarket

Fitness:

- Program grants go to community groups
- Have programs in playgrounds, family fun, etc.

Key Factors:

- Target audience & Channels
 - Audience research
 - Look at what stations listening to on radio/ media accessed (frequency)
 - Online platform*
 - Provides recipes
 - Accessible on smartphones
 - Māori, Pacific, low-income
 - Utilize smartphones, public internet access most (library)
- Budget**
- Promotions
 - Back to school
 - Winter (rugby, netball sport)

Other:

- Follow Government policy
- Linking** → collaborate with community programs

APPENDIX L – Quitline Interview Full Transcript

Organization: **Quitline**

Interviewer: Nicole Bieniarz, Shawna Henry, Heather Jones, Libbi Richardson

Date: 17 February 2014

Representative 1: So we have a Māori strategy and the reason for that is to make sure that we have an ultimate goal, a key driver, in our work, to actually measure our work, which is really important. The current picture for us is that, and this is based on the old census data, so this is reduced, the Māori smoking population, but it is based on what we had previously, last year. But based on the old census data we have 182,000 Māori smokers. So that's the gap, that's the problem, to try and manage and support those smokers we have a whole of smoke free initiatives in place. We have a range of cessation providers that span from local Māori providers like AKP [Aukati KaiPaipa] and they are kind of located throughout the different regions of New Zealand, we have primary care which is the GP space, we have DHBs, which is secondary care, and they have a whole lot of cessation providers within their little organizations and then we have us and we're like a non-face-to-face contact service: phone, online, and we can say texting. And there are others of us as well, so we basically try and work together to reduce that number of Māori smokers. We have a lot of advocacy work happening as well to kind of build up the debates against having smoking manufacturers around trying to make pretty much our stance there because the only way we can actually control the number of Māori smokers is to somehow do away with all the cigarette manufacturers. It starts from there, so we have them on one side and we also have health promoters like HPA who you will be visiting and also the marketing team here they do a whole range of marketing stuff. Our Contribution: so we have this Māori strategy and we really want to aim at reducing Māori and families from smoking, we want them not to attempt quitting smoking but to also be permanently smoke-free at the end of the day. We are contracted to do this as well. The ministry have purchased our service to actually provide that service for Māori. In the blue these are our key drivers to actually achieve that ultimate goal: more Māori and Whānau, which is family, to successfully quit. I'll just kind of dive into each of them really briefly. So we need better marketing and I know (Representative 2) and (Representative 3) will touch on what they've done in that space and in a bit more detail. But for

Māori we believe that to stimulate Māori we need, there's a whole range of things we need, hard hitting type advertisements, and I know (Representative 2) will touch on that, emotive stuff helps with Māori, having, children in the ads as well helps with Māori, you know, just to kind of draw on the heart strings, having Māori in the advertisements, in the resources, you know having their faces there as well, that also appeals to Māori. The other outcome that we have that drives our strategy is collaborating with the local communities. We always ensure that we need to work together, you know we only cover like around about 8% now 9% of the smoking population, so the others need to kind of come on board and just somehow work together and just ensure that Māori are permanently smoke-free. So we do make ourselves visible, that is really important in the communities to gain their trust. Three years ago they didn't trust us, they thought we were just a mainstream service, and it wasn't until we kind of got our faces in the region, and to build that trust then they'll slowly get in there, but there is still a long, long, long way to go really to build up a more collaborative kind of partnership. So those are just examples of some of the local services that we liaise with currently. We have Quitline visits so they come in here and actually see what we do. That's a way of building the trust about our service that we actually provide for Māori. Different regions have events, so we try and enter that space by collaborating with the different regions. The last outcome is making sure we have a customized service for Māori. An example is we try and build Māori capabilities, so the language is really important, you know, you don't get to see the person face-to-face so it's really difficult to kind of pinpoint whether the person is Māori or not until they say "yeah I identify as Māori." If their name is a Māori name, pronouncing it is key as well, otherwise you're just going to get disengagement and then they will probably hang up as well. We do help train advisors to build up their language capability. There are other kind of unique identifiers, unique triggers to communicate with Māori, for example: if someone had passed away, if they are smoking and they are stressed out because of a loved one that passed away you know it's a big thing for Māori, so just understanding what they are going through and acknowledging that is quite important. Adapt to the pace because Māori you know, I am not saying that they all speak slowly but just making sure they lead the conversation and listening to them and just giving them the space just to kind of spill it out because it takes them quite a bit of, a lot of courage to actually ring Quitline, you know they've probably been in denial for a long time and then having to actually grab the phone and ring it is quite an achievement for them so we need to acknowledge that as well. And this is just to give

you a heads up of kind of current achievements. We were able to help about 2,010 Māori to be quit at 6 months. So this is, oh do you want to explain the 6 months, to quit at 6 months? My version is they are pretty much smoke-free for 6 months. We self-report them by calling them at 4 weeks and 3 months and this is how we actually get the stats on quit success rates. But yeah that's the only technique we have.

Representative 2: Yeah, it's self-reported, and we ask them "in the past 7 days have you had a cigarette" and if they say "no", then that classified as smoke-free. But some organizations use carbon monoxide testing, so you have to do testing and things, and this is just self-reported, they just tell us, so they have potential to lie.

Representative 1: It's all we've got really, but it's measurable so it's fine. I think you more touch on the other bits, the other service we have for Māori which is phone, web, and text and they are in the resources that you have. In terms of what I've explained we've tried to build up staff capability in the language and just to know the reality of Māori, what they go through, and once they do kind of get an idea then they will be able to kind of communicate a bit more appropriately. With web, we've made changes. Well there are like if you're a client you can actually make up your own account and you have your own kind of skin design as well and they are culturally appropriate designs that Māori could use and we have those for Pacific Islanders as well. Just to keep them interested, like I say you know because using the web is also a great way of doing it, well it's just another way to accommodate a certain group. With text we can text in Māori as well so we will send some motivational quit tips just to kind of keep them on track. We engage so I explained that we go to events and just try and stimulate the communities to actually use our service. There are a few groups that don't even know what Quitline do, so it is vital that we get out there and promote our service. Campaigns – (Representative 3) and (Representative 2) will touch on that. In terms of satisfaction, we are glad to promote that we have achieved 97% Māori satisfaction rate in our service which is quite important, it's a huge lift compared to three years ago where they, where it was probably in the 80% I'm guessing, so it's a huge jump for us. And that's from perseverance you know, we had us being visible, being constantly in the community, it's a lot of communication as well you know to and from providers just to build their trust. It's quite a bit of work to actually do, to get their trust it's, with Māori and even

Pacific, building relationships, it's just a long journey. That's all I have really, and I am hoping they do accommodate some of the questions; otherwise that's the Māori space.

Representative 2: Just wondering if we maybe take a step back and I don't know, I know you have set questions which we'll go through but I don't know how familiar you are with the actual service and what we do and I was wondering if it would be helpful for us to just kind of tell you a bit about what we do?

Heather: Yeah I think that'd be very helpful.

Representative 2: And then I can talk about the company.

Libbi: She suggested it then throws it to someone else.

Representative 3: Quitline was established in 1998 as a trial, I think, and 1999 as a national.

Representative 2: Yeah, I think. Off to a good start.

Representative 3: Quitline began as a phone service, but now the online part of our service is actually a bit more important than the phone service and we also have a texting support service. I guess the aim is for someone who's smokes to be able to access our help in the way that suits them best. So what's common to all of our services is a support model. That support model comprises of a three month program so any person who registers with our service is going to be placed on this three month program where they're going to be encouraged to use nicotine replacement therapy, so that's patches, gum, and lozenges. You can get those from Quitline at a quite highly subsidized rate so it costs like five dollars at the pharmacy instead of up to two hundred dollars for an eight-week supply. The three month program also includes ongoing follow up, so each client is gets at least four follow-up contacts, but they'll get more if they're kind of wavering like if their confidence levels are low. If at the end of the three months they haven't quit smoking, then they're invited to start another program. So just to kind of go through the specifics of the different of phone, online, and text a little more. We have a contact center, the people on the phone lines are a big range of people but quite a lot of them are actually ex-smokers themselves so that means that they can kind of really relate to the people who are calling up. We have a really high proportion of Māori and Pacific advisors so that's another thing which supports all the stuff that (Representative 1) was talking about, hopefully if a Māori or

Pacific person calls they won't be necessarily get a Māori or Pacific advisor but they may well and, yeah, and there's also training for all advisors in terms of kind of cultural awareness so, yeah, the service definitely aims to be culturally appropriate. On the phones the advisors use a technique called motivational interviewing which is really about kind of affirming the client's decision to quit smoking, helping to empower them. They go, they talk about understanding the smoking addiction because we talk about smoking as being an addiction to nicotine, to the chemical part but then also their habits and emotions associated with smoking. So they talk about those things, they talk developing strategies that a person can deal with all three. Yeah, I think that's kind of the essence of the phone service. Online, if when a person signs up online they get their own personal client page, and when they log in to that, it will say "hi, Jane" or whatever their name is. As (Representative 1) mentioned they can customize that with a Māori-looking theme or a Pacifica theme. On that page they also get to see their quit smoking stats, so that's like based on when their quit date has been, how many cigarettes they haven't smoked, how much money they've saved, and, yeah, how many days they've been smoke-free. So that's really motivating for a lot of people. Also online, kind of similarly to on the phone, clients can create kind of a quit plan, where they're going through again those things that are triggering them to smoke and identifying what they're going to do instead. Then one of the most popular parts of the online service is the quit blog, and it's kind of, it's sort of surprising how incredibly popular this quit blog is. So basically that's where people who are quitting smoking or have quit share their stories with each other and support each other. So it's a really kind of quite organic peer support sort of mechanism. There are what maybe over thirty thousand blog postings up on the blog now, so that's over a few years now but every day there are dozens of blogs posted and almost if anyone posts a blog and says, you know, "it's like I'm finding the cravings really hard, I don't know what to do, I think I'm going to relapse," you get other people coming on and commenting and telling them to hang in there and it's a really nice social kind of support mechanism. So, yeah, I'd encourage you to have a look at that, it's on you'll see our website, all over the pages, quit.org.nz. Then we've got our text support service, so that's, oh, actually one other part of online is emails so people can sign up to get regular emails, which sort of has quit tips and advice on quitting again, and being reminded of what their quit statistics are. Then the text support service, Text-to-Quit, basically it's motivational messages and advice for three months. So it's kind of just another way of engaging with clients and reminding them that they

want to quit, maybe if they've kind of like fallen off the way again they get a little text saying "how're you going?" You know, "if you haven't managed to quit, give us a call or go online," so it's just another way of kind of trying to keep people motivated and give them and congratulate them if they are smoke-free. It's at the client's preference which of those three services they use. Obviously they can use the service as much as they like. It's free and the research has shown that the more services a person uses, the better their chances of successfully quitting. So we really encourage people to kind of make the most of all the different kinds of help that are available to them. Yeah, and that includes us referring out to face-to-face providers as well. So other organizations will come and see people in their homes or do group therapy stuff sometimes. Did I miss out anything (Representative 2)?

Representative 2: No I don't think so.

Libbi: That was awesome.

Representative 2: Great overview of.

Representative 3: Yeah, if you kind of look on the inside page of this one, the Quit Book, you'd kind of see a little bit of the summation as well which kind of just touches on the quit stats, that's the service itself but, yeah, in terms of messaging, over to you (Representative 2).

Representative 2: Well I guess the vast majority of people quit smoking by themselves, which we call cold-turkey quitting. They don't use help so about 9% of the smoking population uses Quitline help which is actually a really good statistic compared to international standards, I think its 2% in Australia, Korea, others.

Representative 3: And only 1% for the USA actually. I bet it's different, you know, our funding might be comparatively bigger and, you know, other things like that.

Representative 2: So we believe we've got a really good service, we know that the success rate of people who quit by themselves is about 4%, so at six months about 4% of them successfully quit. On the other hand, we know that about 25% of Quitline clients are smoke-free at six months. Well that might sound like a huge, might not sound like a huge amount, it's actually a really good statistic when you're talking about an addiction so because we know that and we really believe in our service, our advertising and marketing, it's all about encouraging people not

just to quit smoking but to quit smoking with support so our messaging is all around get support and get as much support as possible because as (Representative 3) said we know that the more support people use, the better their chances are of successfully quitting, so in all our campaigns it's both about encouraging people to quit but more importantly telling them about Quitline support and how Quitline support can help them. So in a lot of our campaigns we use, we always try to use real people. We use our Quitline advisors, many of whom are former smokers as you heard, but also our clients who are great testimonials for the service. So we try to run a combination of kind of a motivational ads that give you a reason to quit or get you to quit and those reasons are mostly things like using children and not being sick or going and dying and leaving your family behind, also informative ones to really be very, and our whole brand is about being really positive and cheerful and helping you, so we don't want people to think when they call us we're going to you know tell them they're awful for being a smoker. We're there to help them and really congratulate them on making the decision to quit. So our ads are all about showing you that Quitline aren't scary people, they're really accessible and that we're here to help you. Do you want to go through your specific questions or do you have any questions before we get on to them?

Libbi: I have a question. You guys talked about getting your face out there for the people, like how do the people know that Quitline is out there, like do you use posters or TV or?

Representative 2: TV, oh yeah, so talking about our advertising that we're funded by the Ministry of Health, so we have certain targets and most of them are driven by the number of people we get to use our services, and a lot of our the funding that we get goes on television advertising and basically traditionally that's been the one that's shown to make the most difference, particularly reaching our target are people in low socioeconomic populations, essentially poorer people, aged between twenty to forty five because that's where the majority of the smoking population is and with a focus on Māori and Pacific people. So for that audience we worked with an advertising agency, they still tell us although we know that the TV landscape is changing that TV is the best way of reaching those populations, so we put a lot of our money into television advertising and quite a bit of money into online advertising across very targeted sites, so there are certain sites, say subscriptions where like people put in their details and that we can target our populations through. We use social media so we have a Facebook presence, YouTube

presence, etc. and news those more direct channels. We have in the past done things like bus stop, bus shell advertising, and it's kind of really hard to evaluate those things but we haven't seen them to be very successful. Similarly for radio advertising it hasn't been good for targeting general populations but has been quite good for targeting Pacific populations. So Pacific people seem to be highly conducive of radio but we're always looking at new avenues and definitely online is increasingly where we're going to be as television usage is dropping. We've also done things more recently like video on demand advertising within on demand shows and online video as well and other things like in a lot of hospitals they have televisions you can advertise on that TV, it's called Health T.V. and then there's other opportunities like advertising at sporting events on the screens and things like that.

Representative 3: And having a physical Quiltline presence at events.

Representative 2: Absolutely, so yeah that the populations.

Representative 3: Yeah, so having a stand.

Representative 2: That's a more direct within the community just being really visible, particularly to when it comes to Māori and Pacific populations.

Representative 3: Yeah, and I guess there's media as well, although it's like as (Representative 2) says the demographic is low socioeconomic we kind of know they're maybe not big readers of newspapers.

Representative 2: But that's more influencing stakeholders or funders or and building good will.

Representative 3: And it doesn't mean that none of them will kind of pick up the messages that way and I think it's, certainly, it's kind of help to change the most societies' attitudes around smoking in New Zealand.

Representative 1: And with Māori as well we feel that they do have a TV they do, have got brochures and all that stuff but just to kind of solidify that they actually see our brand and our service we do have, they like face-to-face as well, much better, that's just how they roll. Now I know it's a bit expensive but now our resources are stretched so we try and accommodate them

but, yeah, TV does help but just to kind of put the, you know, just to get the home run we need to actually be there and be visible.

Representative 3: But you can see the all of Quitline's ads on our website, under the first kind of tab, yeah, I think so. I can't reckon what the page name is called, TV advertisements?

Representative 2: Help to quit, I think.

Shawna: Is there like a particular time like schedule-wise that you would like prefer to put out a message or is it just constantly?

Representative 2: Yeah, well we, so our busiest time of the year is January with New Year's resolutions people quitting and equally during the week. Monday is peak quitting time and that kind of drops off by Fridays or work wise and so we kind of place advertising in line with that. We have a continuous presence throughout the year, except for December, because December is with all the sales, Christmassy kind of messages, it's a very expensive time to put ads on TV and also a time where people aren't really that open to quitting. We do try and keep a small presence there, but January is when we come in with lots of messaging and we, television wise, you can place peak advertising or off peak advertising. So peak is you know 6-9:00 in the evening when more people are watching TV and off peak is kind of daytime chat-show type TV. We place a mixture of that, quite a lot of our audience is, you know, if they're unemployed or shift workers would actually be exposed to daytime time TV so we do kind of keep a fifty/fifty peak-to-off peak ratio. Peak is obviously a lot more expensive to put an ad out during that time.

Libbi: I mean obviously I know you're the Quit Group but have you ever done any advertisements for like prevention of even starting smoking? Are you just hoping that your advertisements already?

Representative 2: No, we've got a very specific mandate and that's to offer a quit smoking service, so all our advertising is about quitting and more specifically quitting with support and although kind of prompting people to quit at the same time. You're going to meet with the Health Promotion Agency later, you were saying, and their role is to run preventative campaigns so they'll talk to you about how they have more youth targeted campaigns. They've got one called "Smoking Not Our Future" using kind of music celebrities and things and encouraging

them to think of smoking as being uncool and it not being cool. We will I think (Representative 1) mentioned that we will kind of we do some kind of advocacy work through media commentary will always be very supportive of anything that's preventative like plain packaging which you might have heard of, or banning tobacco displays in shops which are kind of about preventing people starting. Obviously we are very supportive of anything like that but in our advertising marketing, our role is to promote quitting smoking and quitting smoking with Quitline help.

Representative 3: Yeah, and I think there's been like quite an interesting change like over the last ten years in terms of how Quitline has approached this and it might be that this, you might come across some similar kind of dilemmas about how to do things with diabetes in that, obviously one way to go with like marketing service is to use really kind of full on graphic imagery about the harms that someone's going to do to themselves when they smoke and if you've seen cigarette packets here, or perhaps it's the same in the US, I don't know. Do you have like pictures of rotten feet?

Shawna: They're starting to.

Representative 3: Like gangrene.

Shawna: We're starting to. I think they are. I've seen it at home I think.

Representative 3: Right, ok. So the Ministry of Health perhaps about 15 years ago now introduced those warnings on the cigarettes packets, and I know some of Quitline's earlier campaigns really focused on, you know, images like lungs kind of being damaged as if someone was inhaling cigarettes and that sort of thing. And obviously that can prompt people into action. Since I've been working at Quitline, there's been quite a change, like a shift towards more positive messaging, so it's less, been less around the harms of what smoking can do to you, and more around the benefits of being smoke-free. And even like we talked quite a bit about the idea of presenting the idea of a non-smoker as being like an aspirational image. So we actually started in some of our publications and things which kind of had been more featuring real life smokers. We actually said, "Oh, you know, like if Coca-Cola or any cosmetic companies and stuff, if they try to use images of more kind of, you know, aspirational beautiful kind of people on their products to encourage people to want to be like that, maybe we can do a little bit of that

ourselves.” And you know that’s saying a little bit, as you’ve seen in our stuff, our models are still real people. In fact, one of our models is sitting right here at the table! (Representative 1)’s in a lot of our stuff. But, yeah, so it’s like, I think we had a more swim towards more positive messaging, like everything you’ve got to gain from being a non-smoker, which might be the same for you guys, everything you’ve got to gain from not becoming diabetic or for managing your diabetes well. And then we sort of like have had something of a swim back to, ah, I’d say to a more middle ground. This very much kind of led, so it’s like we had these positive messages, we have this very strong research that Quitline’s here to help you with open arms, we’re here to support you. But we’re also using some of those some of those triggers that (Representative 2) was talking about, like you know, so this campaign was called the “Last Dance”, which was someone dying of cancer, facing, you know, is having to say good bye to his partner and his kid. So it’s, you know, the kind of the very worst sort of consequence, I suppose, of smoking. So, yeah, I think it’s interesting with the public health promotions maybe thinking about your balance of negative stuff and positive stuff.

Representative 1: ‘Cause we do include a bit of preventive kind of messages like, for example, this...

Representative 2: Not, not preventative such, but kind of scaring, or that fear-based advertising...

Representative 3: A secondary effect could bother...

Representative 2: Preventative, yes, it’s true. Yeah, I guess, yeah. When trying to get someone to quit.

Representative 1: Even in our scripts, they do talk about negative effects as well. So it’s hard to split.

Representative 2: It is quite...I mean we talked that there is this kind of turnal factor, and so we talked quite a bit to the road safety authorities and their advertising they have that struggle as well. Do we show someone who’s been in an accident or how to get that across because there is that kind of if you show ads that are too graphic, you get that kind of turn away thing: people just change channels or turn away or ad for us that they can then not like or brand or not want to get

in touch because they'll think we're the ones who will tell them, you know, it's bad that they shouldn't be smoking. So yeah, it's really, really important to get that balance right. At the moment, we've got two campaigns running. So we've got the "Last Dance", which is you probably...are you working with Otago University or know someone at Otago University who aspired for a pro-group thing...

Libbi: We're working with them, only a few of the people that work there. It's, uh...

Representative 2: With (N----)?

Libbi: We talked to her for a little bit. She was kind of just helping us with surveying and giving us tips on how to like approach the public. But other than that, she's not really involved in that network too much. So she kind of just came in as a side.

Representative 2: Because I know that they've done quite a lot of interesting research on different types of messaging, and they find that, so what we want is action. We want people to quit, and we want people to call us, and they showed that, showing ads that make you feel afraid, so fearful or guilty, are ones that make you act. So there's a kind of acting emotions whereas ads that just make you feel sad aren't action types of emotions. And so the "Last Dance" is very much in that kind of guilt leaving your child behind fear, fear of dying space. And so we're playing that for half of the time, and the other half of the time we're playing these much more upbeat ads featuring Quitline advisers and each of them kind of telling you a little bit about quitting smoking and how Quitline can help and that very much we can help you and we're not here to judge you. And so hopefully the aim is that the "Last Dance" is kind will of push people to think about quitting and the other will say that Quitline can help you, that these are nice people who will help you with quitting smoking.

Representative 3: Yeah, maybe it would be interesting for you to see them...

Representative 2: Yeah, I should have brought them.

Representative 3: Because I mentioned that with diabetes like smoking research done to people's motivations, either changing a lifestyle so that they don't become diabetic or for learning to manage the diabetes. Because once you understand what those, what even those kind

of triggers are for people then you can build your messages around them. So like the smoking, the one's that always come through is that people's reasons for quitting, the top one's are health, money, and family. So that's kind of like a thing that goes through as a publication and that sort of thing. And then there's this, obviously this stuff that (Representative 2) was talking about, in terms of tone that people respond to. But yeah, as a, what are you, what sort of campaign are they trying to build? What diabetes is it, is it awareness? Is it prevention?

Shawna: It's prevention. They just want to raise the knowledge because a lot of people don't know much about the disease and don't really understand it. So they're trying to find out how much they know. And then use that to actually tell them what it is and get them to not, you know, not have the behavior that will make them more prone towards it. So it's going to be a focus on nutrition and health and wellness because obesity is a huge risk factor for diabetes. So they're just trying to raise the awareness because a lot of people don't make the connection between health and wellness and diabetes. So they're trying to make that connection clear so that people will hopefully start having a healthier lifestyle.

Representative 2: So it's obviously Type 2 diabetes.

Shawna: Yes, it's Type 2 diabetes.

Representative 3: Yeah, cool, did you, what other specific questions do you have...

Shawna: We got them all.

Heather: We got most of them I think.

Shawna: Do you have like one thing that you would say is the most successful, most important thing for a campaign like a one either a channel of outreach or like framing or scheduling thing that is like extremely important and like the most important thing?

Representative 2: For me it really changes a lot over time so as well as media changing the way people consume TV advertising for example, the environmental factors are really, really important to look at. So for us when we first advertised, say ten years ago or so, firstly people didn't even know there was a Quitline service and it was free and, secondly we used this man called Adrian who was dying of oral cancer and used him on the ads. So that was the first time

people had seen that kind of advertising so that led to a huge spike in calls to us and a manageable spike in calls to us. I think if we placed that now it would have a really different effect because everybody knows about us and people have kind of seen those types of ads before, so we do a lot of ongoing evaluation and focus group testing. I think that's just really important. Also the latest census figures have shown that the smoking population has dropped which is fantastic, but then there is this theory that the smokers who are left are more resistant to quitting smoking. It's just kind of a priority knowing your audience which are changing and tailoring messages to them.

Representative 3: Knowing your audience has to be such a key thing, it's like you might but then the population who you're trying to reach. It's like I'm not sure if you've done much of a breakdown around that but that probably would be quite a useful thing to do because it's like you're trying to reach the general public and it like how do you do that?

Libbi: Exactly.

Representative 3: So what sort of person are you going to reach with your ads, are they going to be old, are they going to be young, but then really clear about who are you trying to target? Try and target the people who are the most at risk.

Representative 2: Because you really can't target everyone with one campaign.

Representative 3: You need to find out about them, what's cool in their world, what's their kind of culture, what kind of language do they use? You know, what sort of buttons can you push with them? If it's a youth kind of audience that's then quite a different sort of messaging from maybe older people, because the youth often have well we know with smoking they think they don't think so long-term they sort of think they hear about, you know, bad health effects from smoking but it's like "oh, that happens when you're old," you know, it's like "it's not going to affect me and I'm not going to get hooked or whatever." Then they often do, so it's like.

Representative 2: So cost, for example, is a message that works best for a younger audience, talking about how much smoking is costing you as opposed to a health message, which is very removed from.

Representative 3: And image as well like with youth, so you know smoking is going to give you more wrinkles, it's going to make you smell, it's going to make you testy and the whole kind of social ostracism thing. Smoking, you know, someone might not want to kiss you if you smell smoky and that kind of thing. It might be hard to do that with diabetes, though, because you might be playing on the thing, it would be like if you're overweight.

Shawna: Yeah.

Representative 3: There's attractive but that might be pretty, might be a bit hard.

Libbi: The trouble with diabetes is all the counter campaigns like for McDonalds and it's cheap to buy McDonalds so we are kind of trying to look at like dealing with a crowded media .

Representative 2: There's a huge movement against sugar and fast food at the moment. I think there's quite a lot of litigation going on and in the US.

Libbi: There's a lot of newspaper articles about it

Representative 2: It's pretty interesting I think, and there's rumors that it will be the next tobacco, it sounds a bit like it will.

Representative 3: It does, doesn't it? I saw a story on TV the other night which was actually Simon Thornly, who used to work somewhat with Quitline but he has also done quite a lot of research into obesity and diabetes. They were looking at the behavior of kids from, it was some high school in South Auckland, who were often buying like 1.5 L of like fizzy drink, cheap fizzy drink not even brand stuff that has like 50 teaspoons of sugar in it. Yeah and just talking about how actually it can become, in this doctors opinion, another form of addiction. An addiction to sugar, therefore, it's like that makes it all the harder sometimes with people to stop once they've started that. It's not like you just, with smokers you don't just say "don't smoke it's a bad idea" but like it's really hard and it's this thinking that it might be the same way with high sugar, high fat consumption that is the problem.

Representative 2: For us a big thing is making people realize it's an addiction it's not something, it's not just a habit that you just decide to do or you decide not to. Also, we never

blame the smoker so it's not their fault they're addicted. All the blame goes to the tobacco industry which kind of similar for additives and sugar.

Representative 3: Yeah, you make sugar the demon I suppose.

Representative 2: Another kind of learning is that just keeping messaging really, really, really simple. We've had ads in the past that have just had too many different messages or we thought it was really simple and clear but then when we've done testing people don't even, you know, we've had too many messages and they don't even see half of them really simple, really clear, really direct. I think particularly for Māori populations we've seen that they like it just being very direct, you know exactly what we want them to do kind of a thing rather than trying to be too clever or too vague.

Libbi: I think that has been a problem a lot, too, in campaigns that have been confusing people.

Shawna: I don't really know if there's anything else.

Libbi: Yeah, I think we hit everything.

Shawna: We definitely did.

Libbi: I think we got it. Thank you that was very helpful!

APPENDIX M – Quitline Interview Summary

Organization: **Quitline**

Interviewers: Nicole Bieniarz, Shawna Henry, Heather Jones, Libbi Richardson

Date: 17 February 2014

Reaching the Māori:

- High number of Māori smokers (182,000 based on old census data)
- Work with local Māori providers, primary care, DHBs, and Quitline
- Trying to stop the problem at the source, cigarette manufacturers
- Hard hitting advertisements
 - Emotive, such as including children
 - Use Māori in the advertisement
- Collaborating with local communities is key
 - Make yourself visible to gain trust
 - Quitline visits
- Customized service for Māori
 - Train advisors to build up language capabilities
 - Understand where Māori are coming from culturally
 - Custom culturally appropriate web skin on website
 - Capable of texting in Māori
- 97% Māori satisfaction rate

About Quitline:

- Established in 1999 nationally
- Began as phone service, but now primarily online, supplemented by texting
- Funded by Ministry of Health
- Support model
 - 3 month program including encouragement to use nicotine replacement therapy, ongoing follow up
- Promotes quitting smoking
 - HPA runs preventative campaigns

- Phone services
 - Contact center with people on phone lines
 - some ex-smokers who can relate to the caller
 - Māori and Pacific advisors
 - Motivational interviewing utilized
- Online
 - if you sign up, you get a personal client page
 - can customize with different wall papers
 - quit smoking statistics shown here
 - can create a quit plan
 - quit blog is very popular and allows people to share their quit stories and struggles
 - organic peer support
 - email updates, including tips and advice and quit statistics
- Texting
 - Motivational texts
- 9% of smokers use Quitline when quitting, which is high compared to other countries
- 25% of Quitline clients are smoke free at 6 months, compared to 4% without Quitline

Advertising:

- Both encourage people to quit and tell them about how Quitline support can help them
 - Combination of motivational ads and informative ads
 - Motivational → give you a reason to quit (example: being sick and dying and leaving your family behind)
 - Informative ads → positive and cheerful, showing Quitline is accessible and welcoming
- Message framing
 - Use real people
 - Quitline advisors as well as clients who are smoke free now
 - Used to show more negative images, but lately shift to more positive messaging
 - Show benefits of being smoke free
 - Image of smoke free being aspirational

- Mix of positive and negative messages
 - Right now have “Last Dance” with a positive campaign
 - Important to find the right balance
- Keep the message really simple
- Channels of outreach
 - Television has traditionally made the greatest impact
 - internet → ads on targeted sites
 - social media
 - Facebook, YouTube
 - Bus advertising not as successful
 - Radio not good for general population, but good for Pacific populations
 - Video on demand advertising
 - Advertising on Health television at hospitals
 - Physical presence at events
- Target audience
 - Know your audience, tailor messages to them
 - Can’t target everyone
 - low socioeconomic populations
 - age between 20-45
 - focus on Māori and Pacific
- Scheduling
 - January is best time with New Years
 - Monday is peak quitting time, and that drops by Friday
 - Continuous presence throughout year except for Christmas
 - Mixture of peak and off peak hours (50/50)
 - To reach both 9-5 workers and unemployed and shift workers
- Ongoing evaluation and focus group testing of advertisements