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The Case for Health Literacy Research in Qatar: Identifying Avenues for Progress

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THE CASE FOR HEALTH LITERACY RESEARCH IN QATAR:

IDENTIFYING AVENUES FOR PROGRESS

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Contents

List of tables

Abstract

This thesis studies the attitudes of healthcare provider and consumer groups in Qatar towards health literacy via health promotion. Using Q methodology, data from healthcare providers and consumers was analysed to determine relative attitudes towards previous and future health campaign strategies in Qatar. Consumer data was also collected to determine attitudes towards current health promotion campaigns and the perceived effectiveness of campaigns in encouraging behaviour change. The research also investigates the obstacles that prevent healthcare consumers from adopting the healthier lifestyle choices advocated by some of these campaigns. Participants were residents of Qatar.

The concept of health literacy was first defined in the early 1970s and has been conceptualised as an outcome of health promotion and health education. Yet, despite comprehensive research into health literacy in Western countries, confusion still exists about the concept and its impact.

Countries around the world are still struggling to make significant progress towards reducing key preventable health risks within their populations. These problems are also evident in the State of Qatar, where the continuous rise in indicators of unhealthy lifestyles, such as increased prevalence of preventable non-communicable diseases, may indicate the failure of past campaigns aimed at improving awareness and changing behaviour among the population. However, little research exists into health literacy through healthcare promotion in the Qatari context. This study is a modest step towards addressing this gap.

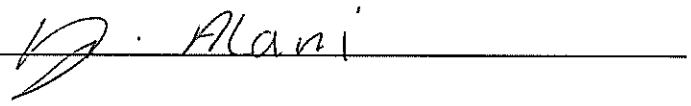
This research revealed three predominant attitudes about health literacy through healthcare promotion and the effectiveness of the delivered healthcare campaigns among the healthcare providers group. Differences lay in participants' judgements of the current adequacy of the situation and in their suggestions for ways forward. Among the healthcare consumers group, four predominant attitudes about the usefulness and effectiveness of healthcare promotion ranged from a highly positive emphasis on personal responsibility and willingness to highly negative ("too many barriers") and suggestions for greater community engagement as essential to healthcare promotion campaigns.

As healthcare promotion campaigns have an important role to play in supporting healthy lifestyle behaviours, this research can assist healthcare providers in Qatar to deliver future promotional health campaigns that are empowering and effective. ■

Declaration of authorship

This thesis is my own original work and to the best of my knowledge, contains no material previously published or written by another person, except where due reference is made in the text of the thesis, where work is not my own original contribution, it has been referenced appropriately.

This thesis has been prepared for the specific and unique purposes of this academic degree and has not been submitted in whole or part for the awarding of any other academic degree at any institution.

Signature of student: 

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Acknowledgements

This thesis completes a journey that I began over three years ago, and there is no doubt in my mind that I am not the same woman today that I was when I first set out. I have always believed that if I want to be a better person for the people I love in my life, I have to learn, and this process has been an amazing learning experience, I am all the better for having researched and written my thesis in the healthcare field.

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Glossary

AlAhli Hospital: A 150-bed private general hospital in Qatar. The hospital was first opened to the public in 2004.

Anti-smoking campaign: The Qatar Foundation, in association with the Supreme Council of Health, launched a campaign against smoking, intending to raise awareness about the dangers of smoking tobacco. The campaign, which is a preamble to World No Tobacco Day, is organised annually by the World Health Organization and in Qatar by the Supreme Council of Health from 2010. The Health, Safety, Security and Environment Directorate decided to launch the campaign after the announcement of recent statistics indicating that almost 40 percent of residents in Qatar are smokers, most of whom are people in their teens or early twenties.

Argela (shisha): An oriental tobacco pipe with a long flexible tube connected to a container where the smoke is cooled by passing through water. Synonyms for *argela* include *narghila*, *hubbly-bubbly* and *water* or *tobacco pipe*.

Aspetar Hospital: This is the first specialised orthopedic and sports medicine hospital in the Gulf region. It provides medical treatment for sports-related injuries in a state-of-the-art facility, staffed by some of the world's leading sports medicine practitioners and researchers and located in the Aspire zone complex.

Aspire Zone: A modern multi-purpose leisure and recreation complex that played host to the Doha 2006 Asian Games in Qatar.

Breastfeeding campaign: This is a social media campaign as part of the World Breast Feeding Week which was organised by Sidra Medical and Research Centre (Sidra). The aim of the campaign is to promote breastfeeding among Qatari women to raise their awareness of the multifaceted benefits of breastfeeding both for mother and baby.

Concourse: The flow of verbal and non-verbal communication surrounding any topic, this may also include pictures, objects and any other stimuli, it is the "flow of communicability surrounding any topic" (Brown, 1991).

Confounded loading: Participants are considered to be confounded if they load significantly on more than one factor. Those participants are therefore excluded and are found not to be loading significantly on any of the study factors.

Crib sheet: This is the tool used by Q methodologists to provide a holistic, consistent and systematic approach to factor interpretation (Watts & Stenner, 2012).

Factors: A set or a cluster of similar opinions or views on a given topic.

Factor loadings: Participants in a given factor who obtain above a certain pre calculated score are considered to load significantly on that particular factor.

Hamad Medical Corporation (HMC): Established by Emiri decree in 1979, HMC is Qatar's premier not-for-profit health care provider. HMC manages a growing number of hospitals and also operates both the national ambulance service and a home healthcare service.

Health literacy: The level of knowledge, personal skills, and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions. Thus, health literacy means more than being

able to read pamphlets and make appointments. By improving people's access to health information, and their capacity to use it effectively, health literacy is critical to 'empowerment'. (Nutbeam, 1998).

Health promotion: The science and art of helping people change their lifestyle to move towards a state of optimal health. Optimal health is defined as a balance of physical, environmental, social, spiritual and intellectual health. Lifestyle change can be facilitated through a combination of efforts to enhance awareness, change behaviour and create environments that support good health practices (O'Donnell, 1989).

Idealised Q sort: This is generated from the Z scores and represent the collective opinion of the factor

'Kulluna': This is a health and safety awareness program of campaigns. The Arabic word *kulluna* means 'all of us'. The campaign's aim was to raise public awareness and influence behaviour related to important health issues, with particular emphasis on improving individual and family health, safety and wellness within the State of Qatar. The program is conducted in close cooperation with the different medical institutions and educational establishments under the umbrella of Hamad Medical Corporation (HMC). With the objectives of, promoting healthier lifestyles, influencing those behaviours that affect the health and safety of everyone in the community (precaution, prevention and intervention, creating awareness of existing medical services and facilities offered by HMC and to highlight the importance of corporate social responsibility.

Lifestyle: A lifestyle is a pattern of repeated acts that are both dynamic and to some degree hidden to the individual, and they involve the use of artefacts. This lifestyle is founded on beliefs about the world, and its constancy over time is led by intentions to attain goals or sub-goals that are desired. In other

words, a lifestyle is a set of habits that are directed by the same main goal. (Jensen, 2009).

Majlis: This is a sitting area at one's home, farm or compound, where men can gather and socialise.

MET-minutes: MET stands for the 'metabolic equivalent of task'. MET, or simply metabolic equivalent, is a physiological measure expressing the energy cost (or calories) of physical activities.

National Sports Day: As part of Qatar National vision 2030, an Emiri decree was issued on December 2011 announcing the National Sports Day as an important annual occasion. Held on the second Tuesday of every February, the event has the goal of engaging the local community in Qatar with sports activities and fostering the adoption of a healthy lifestyle.

Q-Assessor: A web based data gathering and data analysis application that follows Q Methodology technique. Q-Assessor re-implements the algorithms described by Brown (1982) and instantiated in PQMethod and wraps them into a web-based interface that gives investigators a responsive, real-time and interactive ability to analyse their Q data. Q-Assessor's procedures automatically process data deposited into its database by subjects performing their online sorts and deliver instant results (Reber, Kaufman & Cropp, 2011).

Q method: The procedures of data collection, statistical data analysis and data interpretations (Van Exel & de Graaf, 2005).

Q methodology: Q Methodology is a research method used to study people's 'subjectivity'. It was originally developed by William Stephenson (1902–1989). Q Methodology follows a qualitative statistical approach that encompasses distinctive set of psychometric and operational principles and provide the foundation for the systematic and rigorous study of subjectivity that is a

person's viewpoint, opinion and attitude (Cools et al, 2009). Q Methodology has been used in both clinical settings to assess patients and research settings to examine how people think about a topic.

Q set: It is a set of statements, objects or other stimuli that are drawn from a concourse and that represent a wide range of perspectives on a given topic under investigation, it is also referred to as Q sample.

P set: This term refers to the participants who are preforming the Q sorts.

Post-sorting interviews: The follow-up interviews that are conducted after participants have completed sorting their statements.

PQ Method: PQ Method is a software application developed specifically for Q methodology. It supports the ability to analyse and interpret the data gathered using Q sorts. This software was developed by Schmolck (2013) and is available and free for Q methodology researchers.

Primary Health Care Corporation (PHCC): This organisation provides primary healthcare for the people of Qatar through a growing number of health centres. PHCC was established as an independent corporation in 2012.

Sidra Medical and Research Centre: A medical and research centre, currently under construction, with the focus on the health and well-being of women and children. Sidra aims to help deliver high quality patient care, medical education and to become leading centre for biomedical research.

Q factor analysis: This is the Qualitative part of Q methodology. It refers to the statistical procedures used to extract common views or cluster of views from Q sorts to form set of factors.

Q sort: Q sort is the data gathering tool in Q methodology. Participants are asked to rank order statements from a Q set in standardised sorting distribution grid.

Sorting distribution grid: A sorting grid that participants use to rank order their statements. The sorting distribution is normally numbered from positive value at one pole, through zero, to the equivalent negative value at the other pole (Van Exel & de Graaf, 2005).

The Supreme Council of Health (SCH): The council was established in 2009 and given responsibility for guiding reform in Qatar. The SCH's role is to create a clear vision for the nation's health direction, set goals and objectives for the country, design policies to achieve the vision, regulate the medical landscape, protect the public's health, set the health research agenda, and monitor and evaluate progress towards achieving those objectives.

'Step into health': This is a dynamic program initiated by Aspire Zone Foundation, and under the supervision and management of Healthy Lifestyle Program of Aspetar Sports Hospital. The program promotes the concept of holistic health change to engage the people of Qatar in a self-managed lifelong program based on a moderate amount of daily physical activity, encouraging each person to walk 10,000 steps and more a day in a non-competitive, recreational and social approach. It is a multi- interventions program using tools that set targets for physical activity and nutrition. It helps individuals monitor their performance linked to an online program.

'Think Pink': This is part of the annual Think Pink Breast Cancer Awareness Walk. Qatar, with its long tradition of modesty, is no different from the rest of the world, with a stigma attached to many medical procedures and breast cancer in particular. Despite the fact that the Gulf Centre for cancer registration estimates that Qatar has the third-highest cancer incident rate in

the region, behind Bahrain and Kuwait, for many people, open discussion is still taboo. Even a Google search will find many informational sites blocked because of references to breasts. With cancer accounting for 10 per cent of all deaths in Qatar, combined with an aging and growing population, it is estimated the incidence of cancer will more than double by 2030 (National Health Strategy-Qatar. 2011).

'Wheels 'n Heels': This is an annual family fun day, organised by the Reach Out To Asia organisation in Qatar. The aim of this annual event is to support social growth in Qatar and to raise public awareness of healthy lifestyles within various communities that reside in Qatar. This event also promotes healthy exercise and eating habits.

'Your Health First': This is a five-year health campaign launched in Qatar in 2012. Its aim is to educate both the Qatari and expatriate communities about healthy lifestyles. This campaign was a collaborative effort between the public and the private healthcare sectors in Qatar. The campaign was designed to target the 10 to 25-year-old age group. Each stage of this campaign was designed to last for a year with a focus on two major health issues as well as public health.

Z scores: These are the weighted scores calculated for each statement in a Q set during the factor analysis stage. They are used to generate the idealised Q sort for the factor. ■

Chapter 1

Introduction

The purpose of this research is to identify the approach likely to be most effective in encouraging health literacy via health promotion campaigns in Qatar, as seen from the view of healthcare providers. The research also considers healthcare consumers' opinions and motivations towards health awareness campaigns, as well as the barriers that prevent them from adopting the healthy behaviours advised by these campaigns. The target audience for this research are residents of Qatar, regardless of their nationalities and ethnicities. The theoretical framework of this research is health literacy. Within this framework, the research seeks to extend current scholarly understanding of the effectiveness of health campaigns on consumer behaviour and to add to the broader assemblage of knowledge regarding the cultivation of health literacy across different global contexts.

This chapter provides an overview of the research investigation undertaken in this thesis. Using Stephenson's (1936) Q methodology, the opinions and attitudes of healthcare providers and healthcare consumers towards healthcare campaigns were explored. Given the relative absence of research conducted in Qatar, this prompts the question of how much is known about the effects of health campaigns in the context of global health literacy. Yet, if the issue is to be fully understood, lesser studied contexts such as those in the United Arab Emirates provide excellent insight.

1.1 Background to the research

Preventable and lifestyle-related diseases are on the rise across the world. According to the World Health Organization (WHO), worldwide obesity has more than doubled since 1980, with 39% of adults aged 18 years and over classified as overweight in 2014, and 13% as obese (WHO, 2015).

Indeed, chronic lifestyle-related diseases, including cardiovascular disease, type 2 diabetes and cancer, are now the most common causes of death in Westernised societies and are increasing rapidly in developing nations. Conditions such as obesity, diabetes and hypertension are now commonplace among children (Roberts & Barnard, 2005; Booth et al., 2000) contend that this rapid growth in the prevalence of chronic lifestyle-related disease amounts to the emergence of an epidemic in the latter part of the 20th century. Moreover, WHO has stated that the rapid rise in chronic lifestyle-related health problems is a global phenomenon that places a heavy and growing burden on healthcare services in many countries around the world (WHO, 2005).

In the context of 56 million deaths world-wide in 2012, 38 million, or 68%, were due to non-communicable diseases—mainly cardiovascular diseases, diabetes, cancers and chronic respiratory diseases—and this impact is expected to get worse as populations age. To add to the picture, lack of physical activity contributes to 3.2 million deaths worldwide each year (WHO, 2014).

The growth of the internet has provided improved access to health-related information for audiences in many parts of the world, particularly in developed countries, so information about the risks posed by unhealthy lifestyle behaviours is now widely and freely available (McCray, 2005). In spite of this improved access to information, the large numbers of health campaigns, and the concomitant improvement in general health literacy among adult populations, adoption of the healthy behaviours espoused by

health literacy resources remains at an unsatisfactorily low level (Wakefield, Loken & Hornik, 2010).

This overview draws primarily from Western sources, such as the United States and, to this extent, the challenges for the Western world are largely understood. By contrast, less is known about the preventable disease communication challenges facing countries with similar cultures such as Qatar, thus representing a considerable knowledge gap in the global picture of health literacy via health promotion. This research helps to fill this gap by focusing on the management of health literacy communication in Qatar.

1.2 Research significance

The State of Qatar is the home of a small peninsular Arab nation rich in oil and gas natural reserves. As of 31 August 2015, its population was estimated to be 2,288,927 (The Ministry of Development Planning and Statistics, Qatar). The World Health Organization (WHO) have ranked Qatar at the top of the per capita health expenditure list among the Gulf Cooperative Council (GCC) (WHO, 2010). This expenditure has had a positive effect on the budget allocated for research and specifically health related research in the country. Allocation of funds in the future to investigate health literacy further and funding of an effective nationwide health promotional programs could prove to be advantageous.

Qatar is well-placed to provide cutting-edge research to contribute to international efforts to achieve better understand of health literacy in economically developing countries. The nation's ability to fund and resource health research projects is substantial, with a per capita health expenditure level of US$2,756— a sum only marginally less than the Organization for Economic Cooperation and Development (OECD) average of US$2,984 (Supreme Council of Health, 2011a). Three factors suggest that it could not be a better time to embark on research to improve Qatar's health literacy: the

Qatari leadership's commitment to spend 2.8% of gross domestic product on research and development (Qatar General Secretariat of General Planning, 2011); the development of the Qatar National Research Fund, which provides an annual round of funding to projects aligned with Qatar's overall research goals (Cecchine et al., 2012); and the focus on health within the Qatar National Research Strategy (Qatar General Secretariat for Development Planning2012). However, there is a need for more baseline data.

The Qatar National Health Strategy 2011–2016 report of 2011 notes that accurate, comprehensive data across healthcare metrics is typically not available in Qatar. Reasons include the fact that cause of death is often not recorded accurately, and that metrics such as readmission rates, hospital infection rates, and rates of return to theatre are not tracked at a national level (Supreme Council of Health, 2011).

There is also a need for more information about consumers' interactions with the healthcare system, the existing level of consumers' health knowledge and agreement on ways to best evaluate health literacy in Qatar. The latter would have to take into account Qatar's unique demography, characterised by a small indigenous population, estimated to be less than 15%, and a much larger percentage of expatriates (World Population Review, 2015). Any attempts at data gathering must be sensitive to local cultural norms.

Some progress is already being made in the collection of baseline consumer data. The Qatar Supreme Council of Health (subsequently renamed the Ministry of Health) announced the country's first consumer experience health survey in early 2013. To be conducted annually, this survey forms the baseline for improvements to health care and patient safety on a national level. Given the scope and complexity of the issue of health literacy, and the implications for acting upon health knowledge, extensive research and investigation is essential. However, in a country that has widely

acknowledged a need to take a different approach to reducing morbidity from preventable causes, the value of health literacy research is likely to be substantial. Additionally, there is little understanding of the current status of health literacy in Qatar (Supreme Council of Health, 2011). Health literacy is, by its nature, a nebulous concept (Berkman, Davis & McCormack, 2010), covering a vast array of elements related to culture, personality traits, education, social background, experience, family values, and personal health, to name just a few.

In Qatar, the gap in knowledge in this field is large. Health literacy has not been investigated or researched in Qatar as it has been in developed countries. Very few attempts have been directed towards improving literacy and knowledge of specific diseases. Several of these diseases have been the focal point of intensive campaigns in the West yet they go largely unmanaged in Qatar. For instance, knowledge and practices concerning mental illness have been found to be quite poor among Qatari nationals and Arab expatriates (Ghuloum, Bener & Burgut, 2010). Furthermore, while efforts have been made in Qatar to improve health literacy in terms of knowledge about nutrition, the number of health nutrition education programs is proportionally far fewer than in the United States (Matthews et al., 2013). In light of this, Qatar can learn from the experiences of other countries that are attempting to enhance their health literacy, and, subsequently Qatar can provide a valuable insight into a health literacy approach and activation within the Gulf region.

Thus, while the primary focus of health literacy research has been Western countries such as Australia, Canada and the United States, this thesis offers a fresh perspective by examining the field in a relatively unresearched context. An investigation into health literacy in Qatar is likely to benefit health consumers not only in Qatar but also across the region, providing valuable feedback about promotional approaches that can be effective and affect

behavioural change. It is also hoped that, by focusing on a lesser-studied context, we will advance our understanding of health literacy at a global level.

1.3 Framework and research question

The collection of data in Qatar on lifestyle-related diseases, or non-communicable diseases (NCDs), is in its infancy. However, the data from the small number of studies conducted shows a high prevalence of lifestyle-related diseases and conditions among the Qatar population. For example, the World Health Survey conducted jointly by the Qatar National Health Authority (QNHA) and the WHO (2006) reported that 39% of adults living in Qatar had a Body Mass Index (BMI) of between 25 and 30, which is classed as overweight, and that 29% presented with a BMI between 30 and 40, which is classed as obese. Haj Bakri and Al-Thani (2013) reported in the Qatar 2012 STEPS survey for non-communicable disease risk factors that 39.5% of men and 43.2% of female Qatari nationals aged 18 to 64 are obese. Bener et al. (2009) reported that an estimated 16.7% of the adult Qatari population suffer from type 2 diabetes; by comparison, a report published by the Center for Disease Control (2011) found that 8.3% of people of all ages in the United States have the disease. Furthermore, non-communicable diseases accounted for an estimated 69% of all classified deaths in Qatar in 2008, with cardiovascular diseases accounting for 23%, diabetes 7% and cancers 20%. At 7%, Qatar's proportion of diabetes-related deaths is more than double that of most other high-income countries, which typically report rates of between 1% and 3%. WHO, 2011 (Appendix 1).

Myers (2010) has argued that modifiable health behaviours can reduce chronic illnesses. Indeed, chronic illnesses are largely preventable: the WHO estimates that more than 80% of all cases of type 2 diabetes and cardiovascular disease, and more than 40% of cancers, could be prevented by changes in behaviour (WHO, 2005). However, recent trends in adult levels of

participation in physical activity as a leisure pursuit, for example, have not improved in many developed countries (Morbidity and Mortality Weekly Report, 2001), and have in fact declined in the United Kingdom and Australia (Department of Health, 2000; Salmon et al., 2003). Increases in obesity have been related to dietary changes as well as to a general decrease in physical activity (James, 1995; Prentice and Jebb, 1995).

In Qatar, the 2012 STEPS survey found that 37.4% of men and 54.2% of women had low levels of daily activity, defined as less than 600 MET-minutes[1] per week (Haj Bakri & Al-Thani, 2013). These figures are worse than those reported for the United States by the WHO (2011), where 35.5% of men and 50.6% of women were found to exhibit physical inactivity. The WHO (2011) survey also revealed that non-communicable diseases cause death among the Qatari population at a younger age is higher than the case in the United States – in Qatar 60.8% of non-communicable disease deaths occur in people below 60 years of age, while in the United States the figure is just 19.2%. Previous research has also indicated that per capita healthcare spending is greater for patients with low health literacy than for those with adequate health literacy (Baker, 2002, cited in Nielsen-Bohlman, Panzer & Kindig, 2004).

Additionally, the Qatar National Health Strategy (QNHS, 2011–2016) states that Qatar has the second highest prevalence of overweight and obesity in the Gulf Cooperation Council region, considerably higher than most OECD countries. The same report notes that obesity among children in Qatar is worryingly high at 28%, and states:

> Given both the limited success healthcare systems have had in tackling obesity as well as Qatar's unique context, it is critical for Qatar to implement

[1] A MET minute (metabolic equivalent of task) is a physiological measure expressing the energy cost (or calories) of physical activities.

> a public health evaluation system that determines the most effective set of interventions for the nation. (Qatar General Secretariat for Development and planning 011: 72)

The report suggests a number of measures, including promoting health literacy in schools and workplaces, compulsory swimming education for all students, increased opportunities for physical activity, campaigns and legislation to encourage cessation of tobacco use and providing more nutritional information about food in restaurants and through food labelling.

Therefore, there is a strong case for advocating behavioural changes among the population in Qatar with a view to improving healthcare outcomes, particularly in relation to chronic lifestyle-related diseases. Indeed, the national health authority in Qatar recognises the need to encourage behavioural changes to improve health (Supreme Council of Health, 2011), and many government, social and academic institutions have either run or supported health promotion campaigns.

However, the impact of these campaigns in terms of positively effecting healthcare consumers' behaviour and improving their health literacy is not known. A clear knowledge gap exists. This research is a modest attempt to contribute to the research pool, which will aim to eventually bridge that gap. The absence of knowledge about both the need for and impact of health promotional campaigns that improve health literacy in Qatar forms the basis for the research questions posed in this thesis.

The over-arching core question this thesis seeks to answer is: What can the Qatari experience of the effectiveness of health campaigns tell us about the relationship between such campaigns and health literacy in a developing context?

To address this question, the research investigates healthcare providers' opinions about approaches to encouraging health literacy through health promotion campaigns in Qatar. The key questions to emerge in the investigation of the health providers' perspectives are:

- What resources are required to develop health literacy further?
- How can the health system work with government and non-government bodies, researchers, the education system and consumers to achieve a more health literate Qatar?

This thesis also focuses on the healthcare consumer's perspective, in order to understand consumers' opinions of local health awareness campaigns. The key questions to emerge through the exploration of this perspective are:

- Do healthcare consumers in Qatar feel motivated to change their behaviours by local health promotion campaigns?
- What barriers prevent consumers from adopting the healthy behaviours advised by these campaigns?

The literature review in chapter two will examine the historical context of health promotion initiatives in the developed world, in order to understand how they have evolved over time in response to increasingly sophisticated concepts of health literacy, using examples of successful and failed models.

Promotional campaigns have long been used to promote public health, with early examples dating back to the 18th century in the United States (Noack, 1987). In a review of campaigns promoting physical activity, Cavill and Bauman (2004) reported that these campaigns frequently succeeded in raising awareness of health issues, as well as achieving high recall rates, with a median of 70% of the target group becoming aware of the campaign. However, few of the campaigns resulted in the desired behavioural change of increased physical activity. Nutbeam (2006) states that health promotional

activities have created general awareness but, like Cavill and Bauman (2004), he points out that many have failed to modify behaviour. He identifies the failures of previous promotional public health programs to address the social and economic determinants of health, and looks at the subsequent lack of effectiveness of health education in contemporary health promotion. Applying these findings to the State of Qatar, it would seem that we need a better understanding of the social, economic and cultural factors that influence attitudes towards health if health bodies are to create campaigns that have an increased likelihood of success.

1.4 Methodology

This research employs Q methodology for data collection, analysis and reporting. Q method is versatile and can be used to identify many subjective opinions and attitudes held by a broad range of individuals about themselves, including those related to issues such as stress, self-esteem and body image (Denton et al., 2008).

This methodology was developed by William Stephenson in the 1930s and is referred to in related literature by the names 'Q' or 'Q method'. Q has been defined as the "methodology that provides a foundation for the systematic study of subjectivity, a person's viewpoint, opinion, beliefs, attitude, and the like" (Cools, Moons, Janssens & Wets, 2009: 442). As elaborated by Brown, the methodology consists of a set of connected techniques designed to enable the study of the richness of subjectivity. Stephenson developed Q as a way to systematically reveal the subjectivity involved in any situation (Brown, 1996). Q methodology combines qualitative and quantitative techniques, and is based on research carried out both in the field and at the desk (Van Exel & De Graaf, 2005).

1.4.1 Justification for using Q methodology

Evidence of the use of Q methodology in healthcare and communication research literature suggests it is an appropriate tool for this study. Dennis (1986) has highlighted examples of subjectivity research that can benefit from the use of Q methodology, such as quantifying the health beliefs of individuals, which may cover topics including preventative health practices, the impact of cultural values on seeking healthcare, and lifestyle choices such as diet and exercise. Q has also been applied in the fields of communication and health sciences (Brown, 1997). More recently, it has been suggested that Q methodology is a robust technique that researchers in the fields of education and health promotion should adopt in exploring attitudes and subjective opinion (Cross, 2005).

Valenta and Wigger (1997) suggest an organisational adaptation of Q method as a vehicle for understanding how personalities influence healthcare professionals in their decisions to adopt or reject new healthcare technologies in the workplace.

Q has also been the preferred methodology to study concepts of a subjective nature in health promotion and disease prevention. Dennis (1986) asserts that awareness of the subjective opinions of individuals is useful for nurses as it can help them safeguard the health of the people they provide care for.

Popovich and Popovich (2000) have demonstrated how Q can be used to aid management decisions and enable effective strategic planning. By using Q with hospital managers, Popovich and Popovich were able to understand the opinions of different stakeholders and illustrate the consensus priorities of the hospital that shaped the strategic plans of the relevant institution.

The methodology has also been used extensively in psychology and other social sciences to study people's viewpoints, i.e. the products of thoughts,

opinions, beliefs, values, tastes and perspectives. In this way, subjective opinions are shown to have a structure and form that allows them to be analysed systematically (Brown, 1996; Dennis, 1986).

Q has been used successfully in both clinical and social settings over the past few decades to assess how people think about a wide variety of topics. For example, three studies carried out by Van Exel and De Graaf (2005) revealed the attitudes of bankers towards their customers, veterinarians' conceptualizations of pets and their owners, and the decision-making processes behind travel choices. Barry and Proops (1998) used Q methodology in a study on environmental trading systems and Tielen et al. (2011) used it to investigate reasons for medication non-adherence in elderly kidney transplant patients.

1.4.2 Q methodology features and steps

Clarifying the subjectivity surrounding various aspects of an idea from an individual's perspective, and determining the statistical differences of that idea, enables the researcher to identify the characteristics of individuals who share similar views. In this research, the qualitative aspect of Q methodology has been used to generate statements via face-to-face interviews. This was the main data collection method. The data collection stage involved generation of statements, statement selection and statement condensing.

The two distinguishing features of Q are:

- the Q data collection method: Q sort, i.e. arrangements of set of cards
- the Q data analysis method: inverted factor analysis

The following sections explain the steps in a Q methodology study

1.4.2.1 Concourse

The Q sort process begins with what are called concourse sessions. These are essentially conversations informed by opinions about the subject in question.

The researcher conducts a series of face-to-face interviews with a carefully selected number of people who have an interest in the research topic or have a strong opinion about it. These interviews generate statements which are transcribed and from which the concourse is then selected. This process can be complemented by selecting additional statements for the concourse from existing printed sources that contain related opinions about the research topic under investigation. The purpose of this step is to collect statements to form the Q set.

1.4.2.2 Q Sort

The instrumental basis of Q methodology is the Q sort, in which respondents order a set of statements (the Q set) according to their rank related to criteria set by the researcher (Brown, 1996). Q sort is basically the distribution of the statements on a grid on the basis of their importance. The researcher then allocates a random numbering to these selected statements. The grid usually ranges from 'strongly agree' to 'disagree' or 'most important' to 'least important'. Forty (40) to sixty (60) statements are usually considered to be sufficient for a Q study (Watts & Stenner, 2012).

1.4.2.3 Target population (P set)

Respondents in Q methodology are collectively termed the P set. Q methodology typically uses small sample sizes. However, the small number of respondents can provide large number of items because the Q set can consist of many statements. It is these statements, rather than the respondents that comprise the sample for analysis, so relatively small numbers of respondents are sufficient for a comprehensive study (Dennis, 1986). However, Q methodology requires an intensive process and a large time investment.

The interviewing process to obtain the concourse continues until the researcher judges that by interviewing more respondents no or little value can be added to the range of items in the study (Brown, 1980).

Careful sampling of individuals is very important in Q methodology in order to select respondents who are data-rich and those who feel strongly or differently about the issue under study. In contrast with traditional quantitative research methods, it is the statements of respondents rather than the respondents themselves that are of most statistical value in Q methodology (Dennis, 1986). A sample size of 35 respondents has been considered to be sufficient to form a P set. (Brown, 1980)

Follow-up interviews are desirable in Q methodology to further understand the statements, especially those at the two extreme ends of the spectrum. The information from the follow-up interviews can prove to be very useful at a later stage to further explain the reasons behind the extreme opinions and to help explain participants' viewpoints

1.4.2.4 Data analysis method

Q methodology uses the inverted factor analysis technique to analyse Q sort data. The inverted factor analysis of Q sort is a data reduction method that can reduce a large number of data items by calculating the correlation between the Q sorts. This clarifies the level of agreement or disagreement among the various respondents.

Factor analysis involves assigning a factor to each respondent based on his or her responses. The more disagreement among respondents, the larger the range of factors will be.

The method in this analysis stage involves many steps:

- Building a correlation matrix by taking individual Q sorts and identifying what brings a group of individuals together, and then clustering them based on their similar subjective opinions.
- Factor analysis identifies these clusters of opinions and draw the correlations.
- In the interpretation stage the researcher should arrive at a rich description of what people think about the research topic. The follow-up interviews shed further light on the findings and facilitate the interpretation of participants' viewpoints.

1.5 Scope of the study and limitations

This research is designed to study the views of local healthcare providers and consumers about health literacy via health promotion in Qatar.

The research investigates the opinions of adult health providers and health consumers from a range of different nationalities who are residing Qatar, all of whom have a good command of the English language. Adults with minimal or no understanding of spoken English were not included in the research.

A total of 48 healthcare providers and 52 healthcare consumers participated in this research. This number is considered sufficient for carrying out a Q study (Brown, 1980; Van Excel & de Graaf, 2005; Watts & Stenner, 2005; 2012). However, the results of this research may not be generalised as a reflection of the entire views of healthcare providers and consumers in Qatar.

In spite of the fact that Qatar shares many similar cultural, social and economic characteristics with other Gulf Cooperation Council countries such as Bahrain and the United Arab Emirates, this study does not claim that the opinions of those who have participated in Qatar can be generalised to reflect those in neighboring Gulf States.

1.6 Thesis outline

This thesis consists of six main chapters, supported by 22 appendices. This first chapter has introduced and framed the research, provided a brief description of the research method, and stated the research limitations. Chapter two presents a literature review on health literacy and health promotion. Chapter three covers the research method in more detail, describing the interview process, participant selection processes and the tools used to gather and analyse data. A pilot exercise to test the validity of the data is also explained. Chapter four details the main body of the research data analysis, which is the quantitative part of Q. Chapter five provides detailed discussion and further interpretation of the results. The final chapter summarises the study's findings, notes the limitations of the study and identifies future research directions and recommendations.

Definitions and acronyms used throughout this research will be explained on first use in the thesis. They are also listed in the glossary on pages xii to xviii.

1.7 Ethical considerations

Data for this research was gathered from adult participants residing in the State of Qatar only. The study did not involve children and did not gather personal information on participants' medical conditions. The application for ethics clearance for this research was submitted to the University's Human Research Ethics Committee at the end of October 2013 and was consequently approved. Ethical clearance was finalised before participants were contacted or approached. ■

Chapter 2

Literature review

The term 'health literacy' was first used by Simonds in the context of school health education in 1974 (Ratzan, 2001; Frisch et al., 2012). In the field of health promotion health literacy is a relatively new concept, one that provides a possible way through which to better understand past failures in health promotion and to plan potentially more productive future directions. Many health promotion initiatives have failed to persuade their target population to adopt healthier lifestyles (Nutbeam, 2000: 259-267; Bergsma and Carney, 2008: 522-542). Nutbeam has also noted the failings of past educational programs to address the social and economic determinants of health (Nutbeam, 2000).

It is well acknowledged that communicating and developing health literacy is not a simple matter (Ratzan, 2001: 207-214). It requires an understanding of the process of health communication in both clinical and community settings (Nutbeam, 2008) and the development of community involvement (Ratzan, 2001). However, as noted in chapter one, many countries around the world are still struggling to make significant progress towards reducing key preventable health risks within their populations. This chapter provides a review of scholarly literature about health literacy, examines a range of definitions, and summarises some of the reasons that health promotion and education campaigns have not been as successful as protagonists have hoped. The review also includes a snapshot of current health issues in Qatar to put this research into context.

2.1 Health literacy

The term 'health literacy' was first used in 1974, in reference to health education as a policy issue within the healthcare system (Simonds, 1974). As the term implies, the idea stems from the wider concept of literacy, or, at its simplest level, an individual's ability to read and write. However, just as the concept of general literacy was expanded during the 20th century from the baseline idea of being able to understand a form or write a letter to a much more sophisticated concept of being able to research and process information across a variety of mediums in order to successfully deal with everyday life, so the concept of health literacy has changed over time. Andrus and Roth (2002) expanded the definition to include being able to understand and effectively apply health information in order to navigate successfully in society. The concept of health literacy has been reconsidered and expanded by numerous researchers, such as Weiss (1993), Parker et al., (1995), Davis et al. (1998), Kefalides (1999), Baker, (2006), Nutbeam (2008), Ratzan and Parker (2000), Berkman, Davis and McCormack (2010). For example, Davis and McCormack (2010) concluded that, due to the term's complex nature, health literacy can be viewed from many lenses and, in the end, the definition that one selects will depend on one's objective (Berkman, Davis & McCormack, 2010).

Nutbeam developed the concept extensively, describing health literacy to refer to:

> personal, cognitive, and social skills that determine the ability of individuals to gain access to, understand, and use information to promote and maintain good health. These include such outcomes as improved knowledge and understanding of health determinants, and changed attitudes and motivations in relation to health behaviour, as well as improved self-

> sufficiency in relation to defined tasks. (Nutbeam (2006), cited in Berkman, Davis & McCormack, 2010: 13-15)

Equally, considerable research on health literacy has been conducted by important institutions such as the World Health Organization (WHO), the National Work Group on Literacy and Health, and the Institute of Medicine. The Institute's expert panel has also expanded the term and divided the domain of health literacy into cultural and conceptual knowledge, oral literacy, print literacy and numeracy (Baker, 2006).

While there is agreement that the broad concept of literacy, and hence education, is at the root of health literacy, a number of researchers, such as Rudd, Moeykens and Colton (1999) have argued that health literacy has to be seen as much more dynamic and complex than just the ability to understand health-related information. The WHO's constitution reflects this idea, stating:

> The extension to all peoples of the benefits of medical, psychological and related knowledge is essential to the fullest attainment of health. Informed opinion and active cooperation on the part of the public are of the utmost importance in the improvement of the health of the people. (WHO, 2006: 1)

Kickbusch (2001) argues that health literacy as a discrete form of literacy is becoming increasingly important for social, economic and health development.

2.2 Definitions of health literacy

Agreement on a shared definition and measurements of health literacy, while recognised as desirable, has not yet been achieved. The complex nature of the concept means that researchers and other experts can view health literacy in numerous ways (Baker, 2006; Berkman, Davis & McCormack, 2010). It has been suggested that consensus is needed to make the complexity of the concept more manageable (Pearson & Saunders, 2009).

Health literacy, as a concept, has emerged from two broad roots: the 'clinical risk' root and the 'empowerment' root. Nutbeam (2008) extends these trajectories to see health literacy firstly in terms of clinical risk and, secondly, as a personal asset. The clinical risk concept is rooted in the care environment and underpinned by concerns that lack of functional health literacy negatively impacts healthcare outcomes. By contrast, the concept of health literacy as an asset and as an empowerment tool is rooted in educational research into overall literacy, adult learning, and health promotion. Nutbeam (2008) states that the science to support both concepts is not well developed, nor is it focused on the teaching of skills to empower people to exert greater control over their health and the factors that shape health. In Nutbeam's view, treating health literacy in the context of clinical risk serves a purpose in that it may lead to improved assistance for patients who have difficulty following medical advice. However, this approach is quite limited and does not address health literacy as a personal asset, nor does it acknowledge the role of consumers to be personally empowered, taking action and responsibility to manage their health in a preventative manner.

The concept of health literacy as a personal asset and as a social skill that can determine the ability of individuals to access, understand and use information to promote and maintain good health has been adopted by many researchers and health bodies in the field, such as Ratzan and Parker (2000), the Institute of Medicine (Nielsen-Bohlman, Panzer & Kindig, 2004), and the Healthy People 2010 campaign of the United States Department of Health and Human Services (US DHHS, 2000). In this context, Zarcadoolis, Pleasant and Greer (2005) define health literacy as an asset consisting of diverse skills that allow individuals to find, understand and analyse health information and, consequently, make educated choices to maximise health outcomes. Health literacy as an asset can actively lead to desired outcomes and improved

knowledge of health determinants, as well as functioning to change attitudes and motivations in relation to health behaviour (Nutbeam, 2006, cited in Berkman, Davis and McCormack, 2010).

The Institute of Medicine's Committee on Health Literacy, which delivered a report in 2004 outlining a comprehensive strategy to improve health literacy in the U.S., adopted the Ratzan and Parker (2000) definition as its guiding framework (Nielsen-Bohlman, Panzer & Kindig, 2004). The Institute's report was hailed as a landmark publication in the field as it promoted health literacy as both a personal and a social empowerment tool (Nutbeam, 2008). However, Nutbeam points out that the definition of health literacy adopted by the WHO is more reflective of a focus on health promotion. Given that the focus in this research is on health literacy via health promotion, the following definition will be used:

> Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. Health literacy implies the achievement of a level of knowledge, personal skills and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions. Thus, health literacy means more than being able to read pamphlets and make appointments. By improving people's access to health information, and their capacity to use it effectively, health literacy is critical to empowerment.
> (Nutbeam, 1998: 349–364)

2.3 Cost of health literacy

People with low health literacy are more likely to have poor understanding of disease processes, poor recall and comprehension of advice and instructions, poor health beliefs that interfere with care, and poor problem-solving skills

(McCray, 2005; Howard, Gazmararian & Parker, 2005; Parker, Ratzan & Lurie, 2003; Vernon et al., 2007).

Paasche-Orlow et al. (2005) analysed 85 academic studies of health literacy in the United States and concluded that the prevalence of low health literacy among the tested subjects was 26%, with marginal literacy at 20%. The majority of the analysed studies were based on two standardised health literacy tests: the Test of Functional Health Literacy in Adults (TOFHLA) and the Rapid Estimate of Adult Literacy in Medicine (REALM) test. Health literacy was found to be consistently associated with education, ethnicity and age, and low levels of health literacy were deemed to be a barrier to healthcare. Similarly, the report for the Institute of Medicine's Committee on Health Literacy asserted that differences in culture and language have a strong influence on learning and health literacy, and pointed out that failure to provide healthcare advice in culturally and linguistically appropriate forms can negatively impact health literacy and, therefore, healthcare outcomes (Nielsen-Bohlman, Panzer & Kindig, 2004). The report concluded that the research-based evidence demonstrated in this field indicates that patients with limited health literacy and chronic illness have less knowledge of illness management, decreased ability to share in decision-making about their treatment and lower adherence to therapy requirements. Low health literacy contributes to poor health outcomes.

While acknowledging that the scarcity of data available on health literacy makes it difficult to prove a causal link between health literacy, healthcare utilization and healthcare costs, the report stated that the body of evidence consistently pointed to the existence of such a link and called for more research to establish the precise character of the causal relationships. McCray (2005) noted that several studies indicate low-literacy individuals have less knowledge of their health conditions and treatment regimens, lower self-

management skills, higher rates of chronic illnesses and did not effectively participate in preventive care. Low health literacy also appears to carry financial implications, with inpatient spending predicted to cost US$993 more for a patient with inadequate health literacy than for a patient with adequate health literacy (Baker, 2002 cited in Nielsen-Bohlman, Panzer & Kindig, 2004).

There is very little research available about health literacy in Qatar. However, the notably high prevalence of preventable lifestyle-related chronic diseases (Haj Bakri & Al-Thani, 2013) suggests that a health literacy deficit may be an important issue to address in order to improve healthcare outcomes in the country. Additionally, research relating to migrant Middle Eastern populations living in the United States found low levels of health literacy, mistrust of healthcare professionals, cultural misunderstanding between Western physicians and Middle Eastern patients (pertinent to Qatar where many Western expatriate physicians practice), and the persistence of folk beliefs about health which may conflict with conventional treatment options (Lipson & Meleis, 1983).

The issue of low health literacy presents a challenge not only to physicians and other medical professionals, but also to educators and health communication specialists, requiring a coordinated and multidisciplinary approach (Egbert & Nanna, 2009). It is these considerations and the potential that improved health literacy has to produce better healthcare outcomes in Qatar that motivate this research.

2.4 Intersection between health promotion and health literacy

The Ottawa Charter for Health Promotion (1986), presented at the first International Conference on Health Promotion, recognised the need for health literacy among the general population and advocated the use of promotional health campaigns to achieve this end. The charter explicitly identified the intersection between health education, health promotion and health literacy

as a means for enabling the individual to understand and protect his or her own health. The charter acknowledged that health literacy goes beyond the direct interactions between individuals and the healthcare system and called for a whole-of-community approach. Furthermore, the WHO constitution of 1948 defined health as physical, social and mental wellbeing, not just as the absence of disease. Additionally, the WHO's Jakarta Declaration on Leading Health Promotion into the 21st Century (WHO, 1997) asserted that there is evidence to back up the claim that improved health literacy enables people to engage with healthcare providers more effectively and that access to information is an integral part of empowering individuals and communities to safeguard their health. Under the declaration, the empowerment of individuals and community capacity have been linked together as one of the five priorities for enhancing health outcomes in the 21st century. Accordingly, Nutbeam (2008) has claimed that the term 'empowerment for health' is now part of the established lexicon of health promotion.

Health education as a means to promote public health and prevent disease has a long history, with campaigns run in conjunction with immunization programs, and to encourage good hygiene to prevent the transmission of communicable diseases (Paisley, 2001; Perloff, 2003). Health promotion campaigns are known to have been conducted as long ago as the 18th century, when the Reverend Cotton Mather promoted inoculation for smallpox (Paisley, 2000). In the early to mid-19th century, Dr. William Alcott and Reverend Sylvester Graham ran a campaign to promote healthy eating (Paisley, 2001). Alcott and Graham used contemporary mass media resources such as magazines, books and pamphlets, in addition to running a health food store (Perloff, 2003). Rogers and Storey (1987) studied the more recent history of mass media health campaigns in the United States and pointed out that, while large-scale campaigns in the 1940s and 1950s met with limited success,

campaigns of the 1960s and 1970s appeared to have more impact, citing the Stanford Three Community Heart Disease Prevention Program (SHDPP) as a case in point. Conducted from 1972 to 1975 in three towns within the area of Stanford, California, the SHDPP successfully reduced the composite risk score for cardiovascular disease in the target population by 30% by effecting significant declines in smoking, cholesterol levels and blood pressure, through a combination of information communicated via the mass media and by face-to-face consultations (Farquhar, 1991). In a population where a mass media campaign was used without face-to-face consultations, the study still achieved a 25% reduction in the composite risk factors for cardiovascular disease. The success of the SHDPP has thus been described as "the most important single turning point in the rise of the health communication field" (Rogers, 1996).

In general, health campaigns in the 1960s and 1970s were directed towards the prevention of non-communicable diseases by promoting healthy lifestyles. While more effective than those in previous decades, success was limited overall because of an over-simplistic understanding of the relationship between communication and behaviour change (Rogers & Storey, 1987).

In the mid-1970s and 1980s, health campaigns were enriched by the development of a new generation of more sophisticated, theory-informed interventions (Glanz, Lewis & Rimer, 1997). Many theories of behaviour change were developed during this period to guide educational and promotional programs such as Azjen and Fishbein's (1980) theory of planned behaviour, and Bandura's social learning theory (Bandura, 1986). Azjen and Fishbein's theory of planned behaviour provided a new perspective on the complex decision-making processes that underpin behaviours exhibited by individuals. The theory contends that an individual's intentions are the best predictor of their behaviours, and that their intentions are informed by three considerations: their attitude to the behaviour in question; their perception of

their own ability to perform the behaviour; and their beliefs about how others will perceive the behaviour (Fishbein & Ajzen, 1975). In contrast, Schwarzer (2008) has pointed out that an individual's intentions are not necessarily the best predictors of his or her behaviours as most socio-cognitive theories assume. Rather, environmental obstacles and temptations may act upon the individual and compromise their intentions to eat well or exercise frequently. Good intentions therefore need to be supported by practical measures to ensure they result in positive behavioural change (Bauer, Yang & Austin, 2004; Frank, Engelke & Schmid, 2003; Sallis, Bauman & Pratt, 1998; Brownson et al., 2001; Hesketh et al., 2005).

This viewpoint led to the creation of the Health Action Process Approach, in which mediators assist subjects in their efforts to adhere to healthy behavioural changes. Bandura's (1989) social cognitive theory similarly posited that human behaviour is determined by a complex array of competing influences, which include internal dispositions and beliefs, social factors, personal self-perception and identity, and environmental factors. These theories have helped to clarify the complex relationships between knowledge, beliefs and perceived social norms, and provide much needed practical guidance on the content of educational programs to promote behavioural change (Ajzen & Fishbein, 1980; Nutbeam, 2000; Wakefield, Loken, & Hornik, 2010; Maller, et al., 2006). Analysis of health, disease and disability in the populations of most developed countries has confirmed the role of social, economic and environmental factors in determining increased risks of disease and adverse outcomes from disease (Townsend, Davidson & Whitehead, 1988).

The 1980s and 1990s have been described as a 'moderate effects' era (Glasgow et al., 2006). As more was learned about campaigns, scholars came to have a new appreciation of how campaigns work and what makes them

effective (McLeroy, et al., 1988; Engbers et al., 2005; Kay et al., 2011; Glasgow et al., 2006). However, as in previous decades, while some campaigns in this period experienced success, many failed to achieve the desired alteration in behaviour (Rogers & Storey, 1987). For example, Snyder and Hamilton (2002) systematically analysed a sample of 48 health campaigns conducted in the United States in the 1970s, 1980s and 1990s, and found that the average campaign only changed the behaviour of about 8% of the target population in the expected and desired direction. An analysis by Derzon and Lipsey (2002) of 72 published and unpublished campaign studies designed to prevent or reduce youth substance abuse found that knowledge of campaigns among the target audiences was usually much higher than the levels of positive attitude change. Hornik (2002) stated that many large-scale health campaigns yielded either minimal or no change in behaviours, but that campaigns which focused on anti-smoking, blood pressure and cholesterol had been relatively successful. However, Nutbeam (2008) contended that anti-smoking campaigns that relied on disseminating information encouraging people to quit would be likely to fail unless accompanied by additional measures that address the underlying social and environmental factors that contribute to smoking, such as restricting access to tobacco products and banning smoking in public places.

Indeed, if we look at the evolution of concepts of health literacy and health promotion over time, a pattern emerges of increased appreciation of the interplay of numerous factors that influence the decision-making processes behind behavioural changes (Bandura, 1986, 1989, 2004; Fishbein & Ajzen, 1975, 1980). Accordingly, the early health campaigns of the 19th century, which arose largely from a need to address the unhealthy effects of the living and working conditions imposed on populations during the industrial revolution, were relatively simplistic and relied mainly on the dissemination of

information. The experience of these campaigns demonstrated that simply repeating a message is not enough to change behaviour, even if the target audience is able to fully comprehend the message (Ratzan, 2001; Pearson & Saunders, 2009). Consequently, health promotion campaigns became more sophisticated throughout the 20th century, taking into account the wider social and environmental factors that contribute to unhealthy lifestyle choices (Nutbeam, 2000).

By the late 20th century, there had been a shift in the emphasis of public health action towards modifying individual risk behaviours. For example, campaigns have focused on encouraging individuals to change their lifestyles in order to prevent the development of chronic disease or the transmission of sexually transmitted infections (Sparling et al., 2000; Bessinger & Neeru, 2004; Kotler and Roberto, 1989; Grier & Bryant, 2005; Wakefield, Loken & Hornik., 2010; Lee & Kotler, 2011; Cheng, Kotler & Lee, 2011). In the 1970s, 1980s and 1990s, health awareness programs had developed far greater sophistication, and techniques from commercial marketing began to be implemented to influence social norms and behaviours—a strategy termed 'social marketing' (Andreasen, 1995). While this appears to represent a significant shift in the approach to health literacy in relation to promotional campaigns, Rogers and Storey (1987) pointed out that the principles of health campaign design did not change significantly during this period; rather, the principles were deployed more creatively and effectively.

2.5 Social marketing: harnessing the power of commercial marketing for the common good

Social marketing emerged in the 1970s as scholars and practitioners developed theories based on the application of commercial marketing techniques to encourage beneficial social change and healthy behaviours and attitudes in their target audiences (Kotler & Zaltman, 1970; Andreasen, 2006;

Henley et al., 2011). This has clear implications for health professionals and communications practitioners who wish to develop more effective marketing strategies for improving health literacy and encouraging healthy behaviours in their target audiences (Krisjanous, 2014; Hastings, 2007; Kotler & Zaltman, 1970).

Social marketing as a tool for improving health literacy is also highly relevant to Qatar, which has a rapidly growing health sector and a very high prevalence of preventable non-communicable diseases related to poor lifestyle choices, such as obesity, type-2 diabetes and cardiovascular disease (Haj Bakri & Al-Thani, 2013; WHO, 2006; Bener, 2009). Qatar therefore has both the need for and the means to make positive use of social marketing to improve health literacy and encourage healthy lifestyle choices among its population.

Kotler and Zaltman characterised social marketing by asking (1970, p.3): "Can marketing concepts and techniques be effectively applied to the promotion of social objectives such as brotherhood, safe driving and family planning?" Or, as G. D. Wiebe memorably put it in 1952, "Why can't you sell brotherhood like you sell soap?" (Wiebe, 1952).

This way of thinking marked a move away from the traditional method of communicating messages about socially beneficial change. The earlier approach has been reliant on top-down advice, usually in the form of public service announcements that told audiences what they should or should not do to improve society or protect their health, with little effort directed to trying to understand consumers' needs, preferences or their reactions to the material (Hastings & Saren, 2003; Weinreich, 2006; Krisjanous, 2014; Hastings, 2007).

In contrast, social marketing attempts to put the needs, desires and best interests of the target audience at the centre of the communication strategy (Lefebvre, 2013; Glasson et al., 2013; Kennedy & Parsons, 2012), with behaviour/attitude change identified as the goal (Lefebvre, 2013; Glasson et al.,

2013; Kennedy & Parsons, 2012). Market research techniques are deployed during the conception stage of the plan to determine the consumers' needs and the channels through which they prefer to receive information. Market research is also used during and after the campaign to determine whether behaviour/attitude change has been successfully achieved, and to determine the reasons behind the success or lack thereof (Andreasen, 2006; Smith & Schneider, 2009; Donovan & Henley, 2010).

The driver for this change in technique was that marketing campaigns for selling commercial products such as soap were thought to often be successful, while campaigns aimed at effecting social change usually were not (Kotler & Zaltman, 1970; Hastings, 2007; Wymer, 2011). What, then, are the strengths of social marketing that make this so?

A key benefit of social marketing is that it draws upon a vast bulk of proven research from the field of commercial marketing (Donovan & Henley, 2010; Kotler & Zaltman, 1970; Henley et al., 2011). Social marketing is also as flexible and versatile as commercial marketing. It can make use of a diverse range of media to reach its target audience, ranging from traditional methods such as planned events, billboards and print advertising to newer media like websites, apps and social media (Henley et al., 2011; Wymer, 2011; Thackeray et al., 2008). By utilising these media, social marketing campaigns have frequently enjoyed great success, such as the VERB multi ethnic media campaign in the US that in just one year resulted in a 34% increase in weekly free-time physical activity sessions among 8.6 million children aged 9–10 (Grier & Bryant, 2004).

With its focus on the methodical use of market research, social marketing also gives campaign managers a well-established and effective model for determining the needs of target audiences (Glasson et al., 2013; Lefebvre, 2013; Andreasen, 2006; Smith & Schneider, 2009). However, unlike commercial

marketing where the test of success can usually be easily gauged by counting sales figures, the effectiveness of social marketing campaigns is often difficult to determine, particularly if the desired outcome is behavioural change (Smith & Schneider, 2009; Andreasen, 2006; Stead et al., 2007). This necessitates the use of follow-up market research strategies such as questionnaires and interviews, which can be difficult and expensive to implement and can also be unreliable (Stead, Gordon, Angus & McDermott, 2006; Smith & Schneider, 2009; Andreasen, 2006).

Another problem is that social marketing practitioners in the healthcare field have often been tempted to use fear (in the form of fear of death or serious illness) to encourage behaviour change, which can alienate consumers and provoke contrary reactions (Smith, 2006; Henley and Donovan, 1999; Lee and Kotler, 2011). For example, fear marketing aimed at encouraging people to stop smoking can provoke rebellious attitudes in smokers and enhance the social cache of danger surrounding the habit, thus reinforcing the behaviour.

A further difficulty is that social marketing has frequently been implemented by healthcare professionals who understand marketing only poorly and have a tendency to focus narrowly on the promotional and awareness-raising aspects when conducting campaigns while neglecting the planning and monitoring stages (Beall et al., 2011).

2.6 Social marketing in the social media era

The emergence of social media has presented social marketing practitioners with an efficient and low cost method to positively influence lifestyle choices, gather information and feedback, share information of benefit to their public and reach large numbers of people (Thackery et al., 2008). Simultaneously, however, awareness of various threats posed by social media to the success of public health campaigns has developed (Moses et al., 2014), primarily related

to the very real possibility of losing control of a campaign owing to the potential for social media users to react in unpredictable ways.

A key strength of social media for social marketing campaigns is that they provide a method for reaching people across a variety of demographics and social sectors owing to the relative cheapness of modern smart phones and computers and the high level of uptake among most age groups, spanning income divide and ethnic background (Korda & Itani, 2014). Social media campaigns are also easy to integrate with other forms of mass media such as radio, television, billboards and print media in a complementary fashion (Rigotti & Wakefield, 2012). To date, many public health campaigns that have utilised social media have targeted health risk behaviours that impact on non-communicable diseases, such as smoking, poor dietary habits, lack of exercise, alcohol misuse and sexual health issues (Webb et al., 2010). A review of social media public health campaigns in the US found that such campaigns were very effective at recruiting 'followers' but that monitoring the behaviour change of followers was very difficult, and that where behaviour change was monitored it was found to be minimal (Maher et al, 2014).

Similarly, a study of a campaign to reduce *shisha* pipe smoking among young people (called *Shisha*ware) found that the campaign was successful at engaging its target audience of young people in several different countries via Twitter and Facebook, and at directing followers to its educational material hosted on YouTube (viewed 19,428 times), but that numbers of 'tweets' and Facebook 'likes' diminished steadily over time. The study notes that a major limitation of the campaign was a near total inability to access reliable data about the levels of smoking cessation by campaign participants (Jawad et al., 2015).

Not all social media campaigns achieve even this modest level of success, however. In January 2014, tweets sent by Chicago City Council about

proposed legislation to restrict the use of e-cigarettes provoked a 'Twitter bomb'—a coordinated campaign by Twitter users who sent more than 600 messages opposing the legislation. Analysis showed that 89% of tweets about the issue were anti-legislation and the majority of tweets were sent from outside the Chicago area, while local polling suggested most people in the Chicago area were in favor of the legislation (Harris et al., 2014). This example demonstrates how unpredictable social media campaigns can be and how easy it is for campaigners to lose control of their own messages. Conversely, public health campaigns often benefit from the unpredictable nature of social media, with messages disseminated far and wide by users sharing information among one another independently of the original campaign (Bennett and Glasgow, 2009).

A social media campaign in Canada to encourage people with hypertension to see their doctor to find out their blood pressure used telephone canvassing to determine its effects. The study found an approximate 10 percent positive impact in the immediate short-term after the campaign but no positive impact six months after the campaign's end (Petrella et al., 2005).

More positively, one of the most comprehensive studies of the use of social media campaigns determined that they frequently manage to initiate positive behaviour change in in a large number of people but that the changes themselves are fairly modest (Webb et al., 2010). This study also found that social media public health campaigns that were strongly based in academic theory were more successful than those that were not, and that social media interventions that incorporated more behaviour change techniques were more successful than simpler campaigns that incorporated fewer behaviour change techniques (Webb et al., 2010; Korda and Itani, 2014).

Public health researchers have had more straightforward success when they have used analysis of mass data drawn from social media to determine public health issues in geographically defined areas (Dredze, 2012).

Therefore, it seems apparent that social media offers tantalising opportunities for social marketing practitioners to reach, affect and monitor the health behaviours of very large numbers of people, and that social media can be integrated well with traditional media. This could be particularly effective in tackling non-communicable diseases. These are very early days, however, and challenges remain to determine how best to convert reach into real behaviour change.

More research is needed to determine the best methods for effecting and monitoring positive behaviour change through social media (Korda & Itani, 2014).

2.7 Internet and health literacy

The potential of the internet to improve health literacy has been substantively explored (Gray, et al., 2005; McCray, 2005; Cline & Haynes, 2001). McCray (2005) stated that the wealth of health information available online provides individuals with much greater capacity than in the past to widen their understanding of their own health conditions, although the lack of regulation means individuals also have access to vast amounts of material of dubious quality. McCray (2005) also found that the type of information sought from the internet depends on the individual's health status. For example, individuals are more likely to carry out episodic searches about disease prevention, pregnancy, anti-ageing and short-term acute illnesses. People with newly diagnosed conditions unsurprisingly conduct intensive searches about their particular condition, while the chronically ill regularly visit favorite sites and are more likely to discuss the information they have found with their doctors.

Following the growth of the internet, the more recent emergence of social media tools has presented a new medium for communicating and interacting with audiences (Street, Gold & Manning, 2009; Korda & Itani, 2013; Kass-Hout & Alhinnawi, 2013; Thackeray et al., 2012; McNab, 2009; Grier & Bryant, 2005; Chou, Wen-ying Sylvia et al, 2009; Dredze, 2012; Neiger, et al., 2012). According to Berkman, Davis and McCormack (2010), new communications technologies will continue to alter both our understanding and measurement of health literacy, and will become an increasingly accepted mode for communicating health information. In conjunction with other electronic applications, the internet has the potential to greatly improve the quality of doctor–patient interactions and therefore to lead to greater health literacy and better healthcare outcomes (Eng, 2001, cited in McCray, 2005).

While new technologies clearly alter the landscape, they do not diminish the importance of non-digital means of interaction. The US Committee on Health Literacy report (Nielsen-Bohlman, Panzer & Kindig, 2004) found there was strong support for its conclusion that health literacy is based on the interaction of individuals' skills with the healthcare system, the education system, and broad social and cultural factors at home, at work and in the community. In line with this, one of the key findings of the committee's report was that responsibility for health literacy improvement must be shared by all of these sectors. Similarly, Pearson and Saunders (2009) argue that placing greater emphasis on health literacy outside of healthcare settings has the potential to positively impact preventative health and reduce pressures on healthcare systems. The Committee on Health Literacy's reference to cultural factors raises another important point: just as health promotion is not a one-size-fits-all product, attempts to increase health literacy need to take into account the particular cultural context of the target population.

Overall, research indicates that the evolution of social media can support public health interventions to deliver health messages and lifestyle behaviour change in more cost effective and convenient ways (Lefebvre & Flora., 1988; Novelli, 1990; Hastings & Haywood, 1991; Grier & Bryant, 2005; Thackeray et al., 2008).

2.8 Health literacy in Qatar

The majority of literature and research on health literacy currently originates in the United States, Australia, Canada, the United Kingdom and other Western countries. This poses particular questions of cultural relevance for Qatar, where rapid economic development has led to Western-style health problems in a Middle Eastern cultural and social context (Bener et al., 2009). Given that the literature consistently points to the contextual factors that influence the impact of health campaigns, if we are to gain a global understanding of health literacy it is imperative that research is undertaken in less studied environments such as Qatar.

As mentioned earlier, non-communicable diseases are a major cause of mortality in Qatar, accounting for an estimated 69% of classified deaths in 2008. The most frequently occurring causes of death by non-communicable diseases are cardiovascular disease, endocrine conditions (mostly diabetes), cancer, and respiratory illnesses (WHO, 2011). A 2007–2008 study reported the prevalence of diabetes at 16.7% among the adult population (Bener et al., 2009), a figure far exceeding the level in most developed countries. Total mortality figures show diabetes is responsible for 7% of total deaths in Qatar, more than double the rate in Australia (3%) and the U.S. (3%) (WHO, 2011).

Of considerable concern to health educators and researchers is the correspondingly high rate of preventable lifestyle factors. A 2012 survey found that 70.1% of adults in Qatar were overweight and 41.4% were classified as obese, while a total of 70.4% of people surveyed aged between 45

and 64 had three or more risk factors (out of a total of five) for chronic disease (Haj Bakri and Al-Thani, 2013). Earlier research had shown that an estimated 28% of children in Qatar under five years of age were overweight and that juvenile onset diabetes was higher than in other Gulf Cooperation Council countries (Chanpong, 2008). Adding to the picture of an increasing health crisis, a 2013 patient study that examined the association between preventable conditions and cardiovascular disease in Qatar found that more than two-thirds of patients with myocardial infarction (heart attack) admitted to hospital during the two-year study period were younger than 55 years of age, with type 2 diabetes identified as the most prevalent preventable risk factor (Christos et al., 2013). The Qatar National Health Strategy report 2011–2016 (Supreme Council of Health, 2011) pointed to a pressing need for a new approach to tackle chronic disease. The report states that more than 70% of deaths in the country are caused by chronic disease, injuries and congenital disease, which in turn are largely caused by preventable risk factors. The report asserts that the national healthcare strategy will only be successful if the healthcare system shifts its focus from management of acute illness to prevention and early detection of ill health.

The above statistics make it clear that Qatar faces a health crisis, with rapidly increasing rates of preventable and chronic diseases. Raising health literacy levels through health promotion and health education may play a small but vital part in reversing this alarming trend. In the next chapter, the attitudes and viewpoints of healthcare providers and healthcare consumers on the status of health literacy and health promotion will be explored. The unit of analysis in this research is the individual healthcare consumer and the healthcare provider. The analysis of their attitudes and viewpoints may highlight strategies that can bring about positive change. ■

Chapter 3

Research methodology

3.1 Research design

For the reasons explained in chapter one, Q methodology has been used as a data gathering and data analysis method for this research (Stephenson, 1936; Brown, 1980; Watts & Stenner, 2012). Q has been extensively used as a methodology for research in both the health and the communication fields.

Data was initially gathered using interviews from healthcare providers (Table 3.1) and healthcare consumers (Table 3.2). Health statements in local newspapers and magazines were also reviewed as another source of information (Appendix 2). The collected data was then analysed to obtain the opinions and viewpoints surrounding health literacy and health promotion from both healthcare consumers and healthcare providers. This preliminary data provided the basis of the concourse.

3.2 Q Methodology

Q was introduced by the physicist and psychologist William Stephenson in the UK in 1935 (Brown, 1993). The method is described as:

> a qualitative and statistical approach that encompasses a distinctive set of psychometric and operational principles which provides the foundation for the systematic study of subjectivity, a person's view point, opinion, attitude, and the like (Cools, Moons, Janssens and Wets, 2009: 442).

A Q study (research using Q to gather and analyse data) starts with identifying a number of universal statements about a given topic. Each identifiable universe is called a concourse (Watts & Stenner, 2012: 45). The

concourse data is usually collected by interviewing people who are knowledgeable, have different opinions or have an interest in the research topic (Brown, 1980).

From the concourse, a sample of statements is then selected by the researcher. The selection is to ensure that only those statements related to the research topic are targeted, that any repeated statements are discarded and that the total number of statements are manageable. The final number of statements selected are known as the Q set, where "a Q set containing between 40 and 80 items" has become the standard (Watts & Stenner, 2012:67).

A number of carefully selected participants, known as the P set, are then asked to rank order the Q set on a pre-prepared grid to generate Q sorts. Once all Q sorts are completed, the analysis stage will begin to identify the collective viewpoints in relation to the research topic.

The Q methodology steps used in this research are further explained in section 3.3.

3.2.1 Q and R

When introducing Q, it is appropriate to touch upon Pearson's R factor analysis techniques. The advances in statistical theories in the early 20th century have facilitated the use of correlation and factor analysis in the study of human behaviour. Many researchers such as Charles Spearman and Karl Pearson have used questionnaires and surveys to study human behaviour and traits (Brown, 1980). In studying traits, Pearson's product-moment coefficient which produces the 'r' statistics was commonly used. The letter 'r' is usually written in capital letter 'R' and became to represent the 'R method'.

R methodology is the generic name given to Pearson's method, which employs tests as variables and which operates using a sample of persons

(Watts & Stenner, 2012). R was developed by Karl Pearson from the related idea of regression introduced by Francis Galton in the 1880s; Galton was using the term 'reversion' and the symbol '*r*' for what would become 'regression' as early as 1877 (Stigler, 1989). Karl Pearson was also the pioneer who developed the index that is still being used to measure correlation, Pearson's *r*. (Lee Rodgers and Nicewander, 1988).

The Pearson product–moment correlation—or Pearson's *R*—is a measure of the linear correlation between two variables, giving a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation. R methodology has been widely used in social sciences as a measure of the degree of linear dependence between two variables.

Stephenson worked under the supervision of Spearman as a graduate research student, where he was exposed to the use of the R method and the use of correlation and factor analysis (Watts & Stenner, 2012). Stephenson wanted to introduce an alternative method of data analysis for his research, so he introduced Q as the inversion of the traditional factor analysis technique. He referred to this new method as Q methodology to differentiate it from the R methodology (Brown, 1980). Both R and Q methodologies use factor analysis and correlations. However, the two methodologies are set apart through a fundamental difference, as R is used to measure objectivity while Q is used to measure subjectivity (Brown, 1993). Thus, Q is considered a useful mixed methodology for the objective study of subjectivity, where factor analysis is the objective and quantitative part of Q (Watts & Stenner, 2012).

In Q methodology, statements (tests) are the sample and participants are the variables, while R methodology works by using a sample of persons and

employs tests as variables. The correlation process of the participants' profiles will identify similar viewpoints that exist in the study (Brown 1993).

Although Q and R are both based on transpositions of the same data matrix, it is suggested that R methodology factor analysis (also called 'by-variable' factor analysis) ascertains a comprehensive understanding of similarities and differences of viewpoints that exist between variables at the population level (Brown, 1997). However, R is not capable of defining individual differences in a comprehensive and holistic manner, and, to address this issue, Q methodology factor analysis (also known as "by-person" factor analysis) was presented by Stephenson. In Q methodology, a factor analysis person-by-person correlation matrix is produced to allow the study of the agreements or otherwise of all the ranked items (statements) between any two Q sorts (participants) and can, therefore, yield a comprehensive perspective of their viewpoint (Watts & Stenner, 2012:14).

Q methodology cannot use data gathered for the purpose of R, as Q requires data that are scaled and ranked at the time of data collection. Q analysis requires the scores in the rows of the data matrix to be standardised in the same way that columns need to be standardised in R. Therefore, the standardization of scores by row needs to be achieved relative to the entire population of scores for a *single person*. This row standardization was achieved by Stephenson at the time the data was collected in the form of Q sorts (Watts & Stenner, 2012: 12-20).

The difference between R and Q techniques can be demonstrated using a hypothetical example from this research. Taking the healthcare providers group as the example, one aim of the healthcare providers' group study is to test their understanding of and viewpoints about the local health campaigns and the contribution of these campaigns to health literacy of individuals. If R methodology is used, it may correlate the views of providers working in the

private health sector as one variable to their years of experience in the field as another variable and their nationality as a third variable. These are objective variables that are verifiable and that can be extracted. Using R, these traits can be extracted from a large sample of participants and the findings are generalised to explain the characteristics of the total population in relation to the researched test or subject. R uses a large sample of participants to explore variability and generalise results to the entire population.

Q seeks to use subjective variables to identify common beliefs or patterns to reach an understanding of the situation. Using the same hypothetical example, Q methodology starts by understanding the various factors associated with and related to the individual that could impact on their views about the subject. These may include views about government interference, the physical environment, and/or available finance as possible examples. Using Q, participants are asked to rank order the variables and sort them using a pre-prepared ranking grid by using their subjective opinion for each variable. Once all sorts are completed, the statistical analysis that follows will reveal common factors and help to lead to interpretations of various social perspectives. For example, one viewpoint that may emerge could be that budget spends on health campaigns are very low and that this may impact on the duration of the campaigns, with campaigns not run long enough to affect any change. A different viewpoint could emerge, suggesting that a more effective way to promote better health is through community engagement rather than mass advertising.

Hence, Q method is useful insofar as it can produce an in-depth picture of the viewpoint from a small sample of individuals whose characteristics make them relevant to the research subject. In contrast, R is more useful in using random samples that can be generalised to make assertions about the entire population (Brown, 1980; Van Exel & de Graaf, 2005). In summary, the

distinctive characteristics of Q method are the emphasis on subjectivity, the quest for consensus only among subgroups of the population and not among the population as a whole and the efforts to canvas as many different views as possible.

3.2.2 Justification for using Q methodology

Evidence from the use of the methodology in healthcare and communication research literature suggests Q methodology as an appropriate tool for this study (Ahmed et al., 2012; Benjamin, 2014; Bang et al., 2015; Forrester, 2015; van Exel et al., 2015). Dennis (1986) has highlighted examples of subjectivity research that can benefit from the use of Q methodology. These have included quantifying the health beliefs of individuals, which may include preventative health practices, the impact of cultural values on seeking lifestyle choices such as diet and exercise. Q methodology has also been successfully used in the field of communication (Brown, 1997; Ahmed et al., 2012; Benjamin, 2014; Bang et al., 2015; Forrester, 2015; Van Exel et al, 2015).

Valenta and Wigger (1997) suggest an organisational adaptation of Q as a vehicle for understanding how personalities influence healthcare professionals in their decisions to adopt or reject new healthcare technologies in the workplace. This research method has also been the preferred research methodology to study concepts of a subjective nature in health promotion and health prevention (Cross, 2005).

Popovich and Popovich (2000) have demonstrated how Q can be used to aid management decisions and enable effective strategic planning. By using Q with hospital managers, they have been able to understand the opinions of different stakeholders and were able to illustrate the consensus priorities of the hospital that shaped the strategic plans of the relevant institution.

Q is versatile and can also be used to discover subjective attitudes held by individuals about themselves, including issues relating to their stress, self-esteem and body image (Denton et al, 2008). It has been suggested by researchers (Brown; 1980; Watts & Stenner, 2012; Van Exel & de Graaf, 2005) that Q methodology helps to bring forward people's viewpoints or opinions on a particular subject. Researchers are encouraged to take up Q methodology within health education and health promotion to explore attitudes and subjective opinion (Cross, 2005).

This research aimed to do the same by gaining an understanding of the viewpoints and opinions that exist on health campaign effectiveness in promoting health literacy by conducting studies of two related healthcare study groups. This project followed the six steps associated with Q methodology (Barry & Proops, 1999; Hogan, 2008):

1. Identifying the concourse
2. Selecting the Q set
3. Selecting the P set
4. Completing Q sorts
5. Factor analysis
6. Factor interpretation

The following sections discuss each step in detail.

3.3 Identifying the concourse

The data collection begins with a concourse session. Concourse is "universe of statements for and about any situation or context" (Stephenson, 1986:44) where "all statements of concourse are common knowledge" (Stephenson, 1986:239). The concourse can contain verbal and non-verbal data as well as objects, photos, articles, newspapers, interviews or any other external stimuli

(Van Exel & de Graaf, 2005). It has been suggested that obtaining the concourse by conducting interviews has the benefit of eliminating error or bias as the content is being generated directly by the participants of the study (Barry & Proops, 1999; Webler et al, 2009). To obtain the concourse for this research, local health publications and newspapers were initially reviewed for a period of two weeks (Appendix 2). This was followed by nine interviews with healthcare providers (see Table 3.1 below) and six interviews with healthcare consumers (Table 3.2).

3.3.1 Concourse interviews

The interviews aimed to gather opinions and viewpoints of the healthcare providers' group on the approach to encouraging health literacy via public health promotional campaigns and the resources required to further develop health literacy. The opinions of healthcare consumers were sought on whether they feel motivated to change their behaviours due to local health promotion campaigns, what barriers prevent them from acting upon healthcare advice carried in public messages and what approach to healthcare communication best meets their needs. Interviews help to generate a wide range of viewpoints on the topic of the research (Wilson, 2005).

3.3.2 Selecting a sample for the concourse

A number of healthcare provider and consumer groups in Qatar were interviewed to collect statements for the concourse of this research. The healthcare providers group represented policy makers, managers, communication specialists, doctors and nurses from both the public and private health sectors, they were of mixed genders and nationalities. The healthcare consumers group represented individuals of both genders from different countries of origins as well as the indigenous locals. In selecting the

consumer sample care was taken to reflect the multicultural makeup of the community.

All interviewees were proficient in the English language and were over the age of 18. Interviews were conducted with both male and female interviewees. The duration of the interviews ranged between 20 minutes to one hour. All interviews were audio recorded.

Provider	Gender	Title	Organisation	Nationality
1	F	Healthcare communication director	SCH - - Supreme Council of Health, now the Ministry of Health	Qatar
2	M	Director, healthcare policy affairs	SCH	Australia
3	M	Director corporate management	HMC - Hamad Medical Corporation, suite of nine public hospitals	UK
4	F	Nurse	ASD	USA
5	M	Clinical consultant	Aspire - Sports hospital, state of the art sports hospital	Sweden
6	F	Communication manager	Sidra - Women's/Children's hospital, to be open to the public soon	Qatar
7	F	Communication specialist	Sidra	Qatar
8	F	Director of nursing	HMC	Qatar
9	M	Doctor	Al-Ahli - Private hospital, the largest private hospital in Qatar	Jordan

Table 3.1 Concourse: healthcare providers' interviews

Consumer	Gender	Nationality
1	M	Qatar
2	F	Qatar
3	M	Lebanon
4	F	Iraq
5	M	Germany
6	F	Australia

Table 3.2 Concourse: healthcare consumers' interviews

3.3.3 Collecting data

A total of 15 semi-structured, open-ended interviews were conducted during the first quarter of 2014. On a separate, one-by-one basis, nine interviews were conducted with healthcare providers and six interviews were conducted with healthcare consumers. Participants in each group were asked the same set of questions in their particular category to ensure that the research question was addressed and that the feedback covered the universal communicability about the research topic (Section 1.3).

Interviews were conducted in a place and at a time that was most convenient to participants. The interviewing process was concluded when the responses to the interview questions became more repetitive and no new opinions were emerging. This "saturation point" determined the end of the concourse interviewing process (Mason, 2010).

3.3.4 Tool for data collection

After the conclusion of each interview, the data was transcribed into Microsoft Excel spreadsheets, checked for any repetition and saved. Although there are many available Computer-assisted Qualitative Data Analysis software (CAQDA), such as Aquad, MaxQDA, NVivo, Qiqqa, RQDA, amongst many others that can be used to preform transcription analysis, code and plot common themes, especially when large number of

interviews are conducted, the software still requires the researcher to highlight texts and to decide which themes and categories to pursue based on the interview transcript. As only 15 interviews were collected in both groups, this number was comparatively manageable and using Excel spreadsheets was found to be the most practical means by which to group and theme statements. Using spreadsheets was found to be more suitable in managing and theming the statements, identifying repeated or unrelated ones and comparing various sheets. The process was also found to be more informative to the researcher in guiding the analysis

3.3.5 Data themes

The qualitative interviewing process generated a range of views, which were transcribed in forms of statements. It has been argued that not all data collected from interviews will be relevant (Guest, Bunce & Johnson, 2006). During the interviewing process, participants sometimes follow a conversational tangent and talk about unrelated subjects. It is quite common for subjects to deviate from the research questions in such an open-ended, semi-structured type of interview. Therefore, at the conclusion of each interview, opinions were transcribed into short statements using spreadsheets, reviewed for their relevance to the research topic and any repetitive statements were removed. The two groups' interviews yielded 490 statements in total: 223 statements from the healthcare providers group and 267 statements from the healthcare consumers group. Additionally, 57 statements were collected from health-related local print media.

From the total of 490 statements generated, 16 themes were identified, as shown in Table 3.3.

3.4 Selecting Q set or Q sample

The Q set (or sometimes also referred to as the Q sample), consists of statements, traits and descriptions of behaviour or objects drawn from the concourse.

It has been suggested that in order to provide the breadth of communication that exists in relation to the topic of research, the Q set of a study must represent the concourse it has been drawn from (Brown, 1980).

The possibilities of what to include in a Q set "could be many and varied" (Stephenson, 1952: 223). Q sets require considerable time and effort to develop (Curt, 1994: 120-129; Watts & Stenner, 2012: 57) and Brown considers developing the Q set to be "more art than science" (Brown, 1980: 186).

Category No.	Category Detail
1	Beliefs about health in general.
2	Beliefs about the health of people in Qatar.
3	Beliefs about the healthcare system in Qatar.
4	Beliefs about healthcare systems in general.
5	Beliefs about health communication/health communication campaigns in Qatar.
6	Beliefs about health communication/health communication campaigns in general.
7	Beliefs about the knowledge and attitudes of people in Qatar relating to health.
8	Assertions relating to cultural/religious factors/habits.
9	Assertions about governance/public policy/educational policy.
10	Assertions about sport.
11	Assertions about weather/environment/geography in relation to health.
12	Assertions about the role of the media in health communication.
13	Assertions about health research relating to Qatar.
14	Assertions about the role of the family/friends relating to health issues.
15	Assertions about commercial/economic/financial influences on health issues.
16	Statements about smoking.

Table 3.3. Initial themes/categories that emerged from the interviews

For the Q set to address the research questions, it must also have a good coverage of the opinions that exist about the research concourse. This coverage process works like the sampling process in R methodology; where in R the selected sample broadly represents the population from which it is drawn. In Q, the sample of items or statements selected (the concourse) needs to represent the population of opinions about the topic. (Watts & Stenner, 2012: 59). The number of statements in the Q sort is also important, as a small Q set may not cover all the opinions that exist about the topic. Conversely, a large one may cause complications or become difficult for participants to handle. It has been suggested that, as a rule of thumb, a Q sort that contains 40 to 80 statements is sufficient (Watts & Stenner, 2005) and in

most cases a Q sort that covers 40 to 50 statements is considered to be sufficient (Brown, 1980). As the statements in Q methodology may be interpreted by different people in different ways, very close and careful attention is needed to develop each statement. Statements need to be short, concise and clear (Brown, 1980). It has also been suggested that "it is sensible to use a number of participants that is less than the number of items (statements) in the Q set" (Watts & Stenner, 2012:89).

A Q set can be developed in a structured or unstructured way (Watts & Stenner, 2012). In a structured Q sort, the statements or items are broken down into themes and each theme comprises an equal number of items or statements. The unstructured Q set treats the items or statements as a single whole and draws a representative sample from the whole (Webler et al, 2009; Watts & Stenner, 2012). Both structured and unstructured sampling is acceptable. In this research, the unstructured Q set approach was adopted. The main point is to ensure that the selected Q sort represents a variety of opinions from the refereed concourse. It has been argued that even with two different Q sets selected from the same concourse by two different researchers, useful results can still be obtained since the statements selected are propositions and not facts (Watts & Stenner, 2012). Given that the participants are invited to rank the statements, the ultimate significance of the statements will be decided by how all the participants have ranked these same statements (Watts & Stenner, 2005, 2012).

In this study, the interview statements were manually reviewed a number of times to remove unrelated and repetitive statements (items). Subsequently, a total of 53 healthcare providers' statements and 57 healthcare consumers' statements were selected, as they related to the topic of this research. This number of statements was considered a sufficient Q set sample

to be representative of the concourse from which it was drawn (Van Excel & de Graaf, 2005; Watts & Stenner, 2005, 2012; Brown, 1980).

The initial themes were revised to bring about a sharp focus on the research question. The statements that represent the Q set were subsequently grouped under the following six themes for the healthcare providers' category and the eight themes for the healthcare consumers' category.

3.4.1 Themes: Healthcare providers group

1. Beliefs about health communication/health communication campaigns in Qatar.
2. Assertions relating to cultural/religious factors/habits.
3. Assertions about governance/public policy/educational policy.
4. Assertions about sport.
5. Assertions about the role of the family/friends relating to health issues.
6. Statements about smoking.

3.4.2 Themes: Healthcare consumers group

1. Beliefs about health communication/health communication campaigns in Qatar.
2. Beliefs about the knowledge and attitudes of people in Qatar relating to health.
3. Assertions relating to cultural/religious factors/habits.
4. Assertions about governance/public policy/educational policy.
5. Assertions about sport.
6. Assertions about the role of the media in health communication.

7. Assertions about commercial/environmental/economic/financial influences on health issues.
8. Statements about smoking.

For both Providers and consumers groups, statements were defined under each theme as described in the following sections.

3.4.3 Healthcare providers group — Q set grouped by themes

1. Beliefs about health communication/health communication campaigns in Qatar:

- Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most, or all, of the different population groups in Qatar.
- The '*Kulluna*'[1] health promotion campaign messages were clear and have affected consumer behaviour in a positive manner.
- The general awareness of current health communication campaigns is very low in Qatar.
- The quality of health communication campaigns in Qatar is generally poor.
- Healthcare communication in Qatar is based on dictating messages, not on community involvement.
- Health communication campaigns should be targeted at mothers.
- Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive.

[1] The '*Kulluna*' is a health and safety awareness program of campaigns. The word '*Kulluna*' means 'all of us'. See the glossary, pages 14 to 18, for further details.

- Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits.
- Health campaigns should target young people, because advice is more effective if it is learnt at an early age.
- Promoting public health is a new idea for Qatar.
- Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health.
- Health campaigns would be effective if they targeted *majlis*[1] because it is a place where people meet and socialise.
- The 'Think Pink'[2] walk, 'Wheels and Heels'[3] and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour.
- The 'Step into Health'[4] campaign that encouraged walking is an ongoing success.
- Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective.
- The '*Kulluna*' health communication campaign was very effective.

[1] A *majlis* is a sitting area in one's home, farm or compound, where men can gather and socialize.

[2] The 'Think Pink' walk is part of the annual Think Pink Breast Cancer Awareness Walk, Qatar.

[3] 'Wheels and Heels' is an annual family fun day, organized by Reach Out To Asia organization in Qatar, to raise public awareness of healthy lifestyles within various communities that reside in Qatar.

[4] 'Step into Health' is a dynamic program initiated by Aspire Zone Foundation that encourages each person to walk 10,000 steps and more a day in a non-competitive, recreational and social approach.

- The '*Kulluna*' health communication campaign provided much useful information to the public.
- The 'Your Health First'[1] campaign is an example of positive collaboration between health institutions.
- Social media is the best medium for raising awareness of health issues in Qatar.

1. Assertions relating to cultural/religious factors/habits:

- The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits.
- The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful.

2. Assertions about governance/public policy/educational policy:

- Qatar has no baseline upon which it can judge the success of its healthcare communication efforts.
- Healthcare communication in Qatar focuses on disease literacy and not health literacy.
- There is little or no coordination of health communication messages in Qatar amongst various government entities.
- No measures to improve health literacy have been implemented in Qatar.
- Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea.

[1] Your Health First is a five-year health campaign launched in Qatar in 2012. Its aim is to educate both the Qatari and expatriate communities about healthy lifestyles.

- Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of healthcare issues better than individual organisations each delivering their own messages.
- Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar.
- Healthcare entities in Qatar have no preapproved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns.
- Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate.
- Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long-term value of such investment.
- Health literacy is not measured in Qatar so healthcare communication is 'hit and miss'.
- The quality and accuracy of health information given to the public must be regulated.
- Educating mothers about lifestyle choices is an important measure that can improve the health of other family members.
- Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles.

- The responsibilities between health entities with regards to public health promotion and public health education is not clear in Qatar.
- Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health.
- The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population.
- There is no cross-government coordination in Qatar to encourage people to improve their lifestyles.
- Schools play an important role in raising awareness of healthy lifestyle habits.
- Healthcare promotion messages alone are not effective in changing lifestyles behaviour of people, government intervention is also necessary, such as in regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices.
- There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar.
- Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles.
- The government should impose a ban on fast food advertising in Qatar.
- The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one-off" events.

- Food labelling in Qatar should include nutritional facts, serving sizes and calorie counts.

3. Assertions about sport:

- It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age.
- Qatar is making good use of the country's sports facilities to encourage people to exercise regularly.

4. Assertions about the role of the family/friends relating to health issues:

- People are easily influenced by the eating habits of their friends and colleagues.

1. 6. Statements about smoking:

- Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting.
- The current "anti-smoking" campaigns are effective in raising public awareness.

3.4.4 Healthcare consumers group — Q set grouped by themes

2. Beliefs about health communication/health communication campaigns in Qatar:

- TV and social media are the best mediums for raising awareness of health issues in Qatar.
- I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar.
- Communication between healthcare institutions and the community is weak in Qatar.

- The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field.
- Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me.
- There is very little communication of health-related events and activities in Qatar.
- Health communication professionals in Qatar are generally not effective at engaging with the community.
- Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten.
- Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them.
- Twitter is the best medium for communicating health-related information to the Qatari community.
- Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways.
- Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here.
- The '*Kulluna*' health communication campaign did not provide much useful information.
- The '*Kulluna*' health communication campaign failed to make me change my behaviour.

- The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are campaigns I recall but they did not influence my behaviour.
- I participated in the 'Step into Health' campaign that encouraged walking, but once my pedometer stopped, so did I.
- The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar.
- The '*Kulluna*' health communication campaign was too generalised to be effective.

3. Beliefs about the knowledge and attitudes of people in Qatar relating to health:

- Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruit and vegetable prices.
- I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me.
- When I understand the value of a certain behaviour I am more motivated to adopt that behaviour.
- I feel that most healthcare campaigns are not targeted at me, so I just ignore them.
- Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results.
- Most Qataris believe that support from hospital is all they need to safeguard their health.

- Changing the lifestyles of older people is very difficult and is a waste of time and money.
- People in Qatar don't look after their health because they know they have access to free healthcare.
- Most smokers are aware of the health risks of smoking but they are not willing to change their habits.
- "I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving". This is the attitude of most parents in Qatar.
- Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents.
- The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice.
- The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change.
- The terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight.
- Sports events are widely advertised in Qatar, but I am not interested in them.
- Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle.
- People in Qatar are too busy to prepare healthy food to eat every day.

4. Assertions relating to cultural/religious factors/habits:

- A humanitarian approach to healthcare campaigns that makes the community feel cared for would be effective in Qatar.
- The level of health literacy of Qatari women is very low.
- In Qatar, people care more about the way they look than they do about their diet.
- The culture in Qatar relates bad health and illness to fate.
- Religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits.
- The traditional Qatari cultural dress does not encourage people to walk.

5. Assertions about governance/public policy/educational policy:

- Schools adherence to serving healthy foods in their canteens is superficial.
- There is a clear lack of healthy food outlets in Qatar.
- There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decisions about what to eat.
- Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles.
- Lifestyle based health campaigns are not supported by policy.

6. ***Assertions about sport:***

- 'National Sports Day' is a one of Qatar's yearly events. It does not encourage me to change my habits and became more active, in fact, I look forward to having the day off.
- Sports facilities in Qatar are built to meet the requirements of men, not women.

7. ***Assertions about the role of the media in health communication:***

- Information about health campaigns and events usually only appear in the local papers after they have taken place.

8. ***Assertions about commercial/environmental/economic/financial influences on health issues:***

- The hot weather prevents me from integrating walking into my daily routine.
- Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity.
- Traffic is an obstacle that prevents people from playing sports regularly.
- Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine.
- Expensive gym subscriptions prevent people from exercising.

9. ***Statements about smoking:***

- Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting.

- Smoking *argela* (or *shisha)*[1] has become very popular among women in Qatar.
- Anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of Qatari culture.
- Non-smoking places are not respected or enforced in Qatar.
- I am not aware of the "anti-smoking" campaign that is currently taking place in Doha.

3.5 Selecting P set

The participants in Q method who perform the Q sorting process (ranking of Q sets) are referred to as the study P set. Q methodology typically uses small sample sizes. However, the small number of respondents can provide large number of items because the Q set can consist of many statements. It is these statements, rather than the respondents, that comprise the sample for analysis so relatively small numbers of respondents are sufficient for a comprehensive study (Dennis, 1986).

The P set can be operated using either a "single-participant" or "multi-participant" design (Watts & Stenner, 2012: 50). In a single-participant design all that is required is one participant who ranks the same set of statements but under different conditions or instructions. The results, after analysis, will reveal the subjectivity within a single person. It has been suggested that a single-participant study may also reveal the "natural segregation in person's mind" (Good, 2003: 145). A single-participant design is also a useful way to demonstrate and practice the use of Q methodology as they are quick and easy to set up and perform, and they are often used in a classroom scenario as a teaching aid for this reason (Watts & Stenner, 2012: 50).

[1] *Argela* (also known as *shisha*) refers to an oriental tobacco pipe with a long flexible tube connected to a container where the smoke is cooled by passing through water.

A multi-participant design, on the other hand, uses a number of participants. All participants complete separate Q sorts, but with the same Q set, conditions and instructions. For this research, a multi-participant design was used as the research aims to explore the range of opinions and viewpoints that exist in the community in relation to health literacy and health promotion. A multi-participant design was also used to ensure that the factors extracted at the analysis stage would represent the collective, shared viewpoints on the topic.

Four or more responses associated with each factor are usually considered sufficient to establish the existence of a factor (viewpoint) and to enable factor comparisons (Brown, 1980; Van Exel & de Graaf, 2005). Recruitment of participants plays an important role in Q, and, to ensure relevance and variability in the study, it is suggested that "strategic sampling" (participants who are likely to have distinct viewpoints with regards to the study at hand) rather than "opportunity sampling" (sampling through "snowball" techniques and/or via word of mouth) is the preferred sampling approach in Q (Watts & Stenner, 2012: 88). Therefore, the P set in Q methodology is not random, but is usually a structured sample of participants comprised of individuals who are theoretically relevant to the research study, and are expected to have a distinct viewpoint about the question at hand (Brown, 1980).

Q requires a sufficient number of participants to establish the existence of a factor, with 40-60 participants considered to be an acceptable ballpark figure (Brown, 1980). It has been suggested that the P set in Q can be "rather small" (Stephenson, 1936: 358) and, as the aim of Q is to analyse variability within a particular scenario, a small P set is considered sufficient (Robinson, 2008; Watts & Stenner, 2005; 2012; Webler et al, 2009).

In this study the total number of the P set (participants) for the healthcare providers group was 48. Each participant sorted a set of 53 statements (Q set). The total number of healthcare consumer group participants was 52 and they sorted a total of 57 statements.

Careful sampling of individuals is very important in Q methodology in order to select respondents who are data-rich and those who feel strongly or differently about the topic. In contrast with traditional quantitative research methods, it is the statements of respondents rather than the respondents themselves that are of most statistical value in Q methodology (Dennis, 1986; Van Excel & de Graaf, 2005).

In this research, those working in the healthcare setting or the healthcare community (in both the public and private healthcare sectors) were targeted as part of the healthcare providers group. These included healthcare policy makers/managers, healthcare communication specialists, nurses, doctors and healthcare administrators. For the healthcare consumers group, participants of various nationalities were targeted from various organisations and through various networks of friends and colleagues. As stated in section 3.3.2, all participants in this research needed to satisfy certain criteria. They needed to be over 18 years of age, have reasonable proficiency in the English language, comprise a mixture of both genders and been resident in Qatar for at least the past two years. Two years is considered to be a sufficient time for participants to understand the local healthcare system and to be exposed to its health communication messages.

3.6 Completing Q sorts

The instrumental basis of Q methodology is the Q sort, whereby respondents (the P set) order a set of statements (the Q set) according to their rank and according to criteria set by the researcher (Brown, 1996). Q sorts are the instruments by which data are gathered in Q. Brown has also explained that

Q sort is the "technical means of obtaining data for factoring" (Brown, 1980: 17).

Traditionally data were collected manually in Q studies. This manual process works by first handing the Q set to participants from a pack of randomly numbered cards. Each card contains one statement. Each participant also receives a score sheet with a particular continuum of quasi-normal distribution that ranges from 'most disagree' at one end to 'least disagree' at the other end, Brown (1980) suggested that, if the involvement of participants is expected to be low and their knowledge and interest about the research topic is limited, the distribution of the score sheet should be steeper to allow more room for ambiguity in the middle of the distribution. Conversely, if the respondents are expected to have strong knowledge and interest in the research topic, the distribution should be flatter to provide participants with more room for disagreement. Additionally, the range of the distribution depends on the number of the statements as well as its *kurtosis*[1] (Brown, 1980, 1993; Van Exel, 2005).

Prior to the commencement of Q sorting, participants are provided with clear information about the research topic and are given instructions on how a Q sort to be completed. The participants are asked initially to read the statements carefully and to roughly sort them into three categories:

- those they agree with
- those they uncertain about
- those they disagree with.

Once they complete this first step, they are then asked to rank the statements from the three stacks according to the score sheet and instructions provided

[1] *Kurtosis* is a descriptor of the shape of a probability distribution.

by the researcher. It is highly recommended that, once participants complete their Q sorting, they are interviewed by the researcher as the participants' elaborations about their ranking could help with the interpretation stage, especially with those statements they ranked as 'most agree' or 'most disagree' (Van Exel, 2005).

In this research, the interest and involvement of the two selected groups in the topic of research was expected to be high, which required the use of a flatter quasi-normal distribution design as represented in Table 3.4 for the healthcare providers group and Table 3.5 for the healthcare consumer group. Additionally, the high number of statements for both studies made a flatter quasi-normal distribution design suitable.

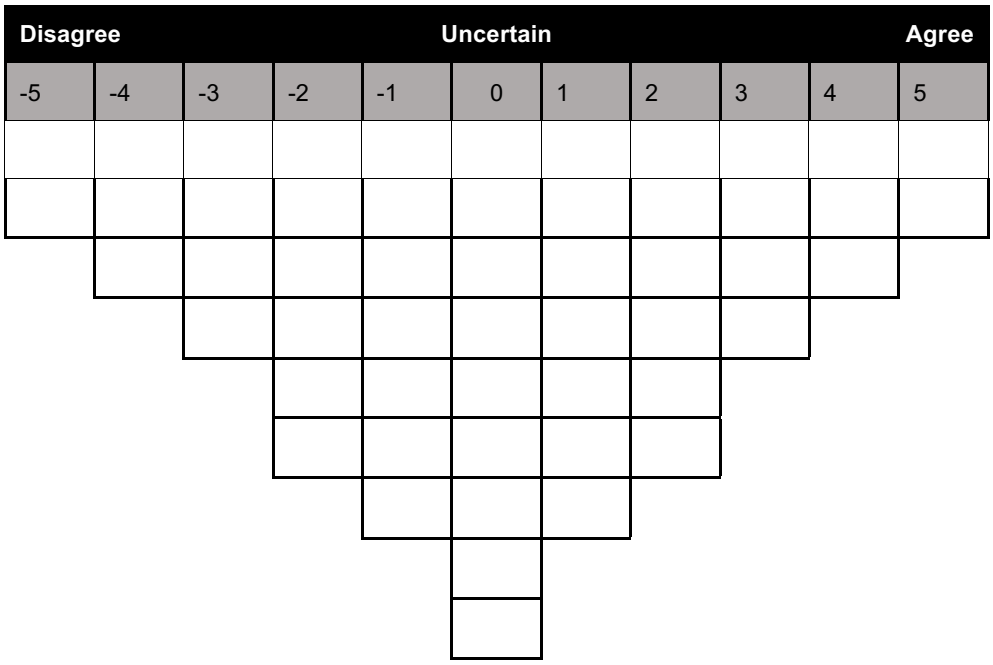

Table 3.4 Healthcare providers group: Q sort quasi-normal distribution

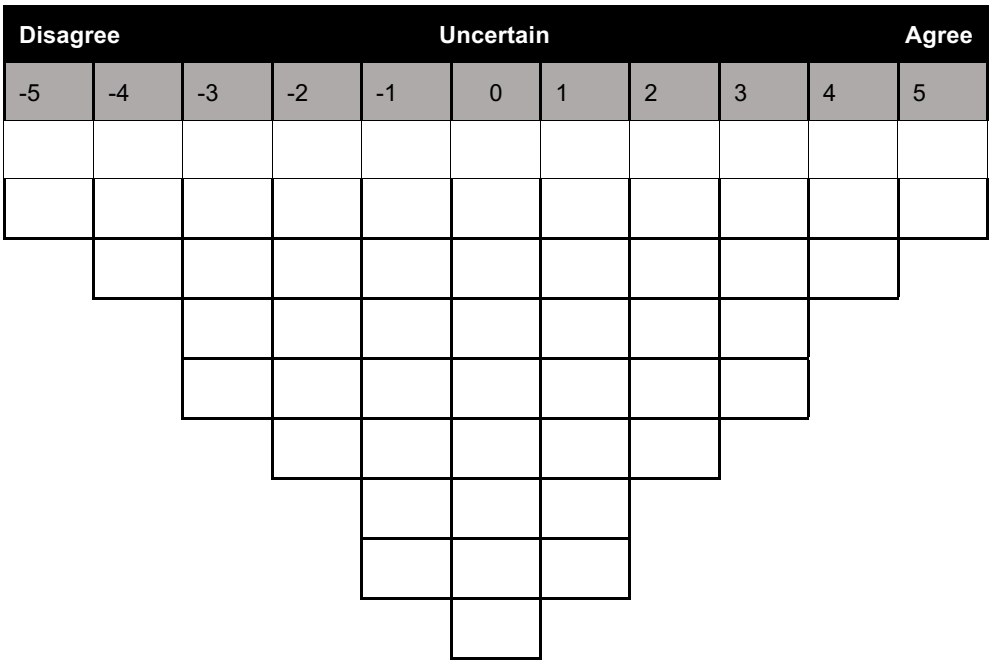

Table 3.5 Healthcare consumers group: Q sort quasi-normal distribution

3.6.1 Data collection tool (Q Assessor)

Traditionally, data were collected manually in Q studies but with modern technology many online tools are now available to allow easy and efficient data collection (Watts & Stenner, 2012: 74). Given the time a manual Q sort can take and in order to maximise convenience for participants, online tools were investigated for use in this study. A clear benefit of the online data collection option is that it allows participants to complete the Q sort in their own time and convenience.

Q Assessor has been validated as a suitable substitute for the traditional technique of face-to-face interviews conducted in person (Reber, Kaufman and Cropp, 2000: 192-209). Kaufman and Cropp (2011) have also published a paper on the online testing of Q Assessor solution to Q Method data gathering and processing which was presented at the World Association for Public Opinion Research in 2011. Accordingly, Q Assessor was tested and selected as the tool to complete the Q sorts for this research.

The two study groups were successfully configured into Q Assessor using the instruction provided by the tool programming team. Information

about the research aim and the Human Research Ethics Committee (HREC) requirements, including the consent form, was incorporated at the introductory page of the tool. The quasi-normal distribution from -5 to +5 was also configured as per Tables 3.4 and 3.5. Statements were entered for each study and the set of instruction were included at the beginning of each page.

When a potential participant agreed to participate in the study after initial discussion with the researcher about the topic and the tool, he/she was then sent the appropriate study link to complete. Participants were given the option of completing the Q sort with the researcher present or via a phone if needed.

The data for the two study groups was collected over a period of three months. Although Q Assessor automates the entire life cycle of Q methodology, the tool was only used to gather Q sorts and the data analysis was performed using PQMethod (a statistical program tailored to the requirements of Q studies). Data were imported directly from Q Assessor to PQMethod to perform the analysis.

To ensure that the Q sort process is easy to follow, and to time the duration required for a person to complete one Q sort, a pilot test was performed with work colleagues. The researcher's presence during these tests allowed answering few questions raised by some of the participants. The pilot test facilitated feedback and the minor comments given were incorporated in the email to be sent to participants. In general, the pilot participants found the tool easy to complete.

Once the tool and the email were fine-tuned and the content was revised and edited, the recruiting process started for participants in each group. Participants were contacted in person or by phone or email. Appendices 3 and 4 show the total healthcare providers and healthcare consumers groups

that have completed the Q sorts. Appendices 5 and 6 show the study statements for the two groups.

Table 3.6 below also shows a summary of the two study groups, the total number of statements, number of participants invited, number of participants who responded and number of completed interviews for each group.

Group Name	No. of Statements	No. of participants invited	No. of Responses	Completed Interviews
Healthcare consumers	57	54	52	52
Healthcare providers	53	62	48	47

Table 3.6 Summary of statements

To gauge the interest of the potential participants identified, the recruiting process started with an introductory email, which was sent to them containing a brief summary of the study. (See Appendix 7.)

Those who confirmed their willingness to participate were sent another email containing a hyperlink that took them directly to the online introductory page in Q-Assessor, which contained detailed information about the study, consent procedures, and how to complete the Q sort (see Appendix 8A). Those who preferred to complete the Q sorts in the presence of the researcher were granted their request. Phone support was also provided for those who requested it.

Participants were provided with information related to their privacy as required by ethics protocols and a description of how the research would be conducted either in person, by phone or email by the researcher. This information was also configured within the data collection tool to ensure that each participant was able to read and accept participation prior to the start of his or her Q sort, as shown in the web pages of Appendix 8B. Appendix 8B

also shows a snapshot of couple of couple of pages of the participation process.

3.7 Q factor analysis

Factor analysis is referred to as the scientific part of Q methodology (Van Exel & de Graaf, 2005). Factor analysis is carried out via a complex statistical process that aims to extract a set of common and shared "viewpoints", which are "subjective" in nature, from a data set in order to uncover the commonalities or differences in viewpoints that exist among the participants, and, in so doing, highlight their social perspectives for interpretation (Watts & Stenner, 2012).

A comprehensive overview of how to perform data analysis for Q sorts was provided by Brown (1980, 1993). Factor analysis is the calculation of a correlation matrix to measure the extent and nature of correlation between each Q sort with every other Q sort; if the correlation between two Q sorts is high, this would indicate that those two participants would have completed their Q sort in similar configuration and therefore have expressed similar opinions and viewpoints in response to the set of statements they have completed. These patterns of similarities and differences that the inter-correlation matrix represents become the source from which the factors will be born (Watts & Stenner, 2012: 98). Following factor analysis, a 'factor loading' is calculated and determined for the study. Factor loading is essentially a measure that shows the extent of a particular Q sort's association with a given factor. If two or more Q sorts have a high factor loading on a particular factor, it means that a similar opinion has been expressed via the Q sorts for that particular factor (Brown, 1980). Factor loading is used to calculate the association of each individual Q sort to each of the study factors (Brown, 1980).

In the first step of the analysis, a number of factors are extracted. This depended on the variability of the Q sorts. It is recommended that a relatively large number of factors are taken to the second step of the analysis, which is factor rotation. This is done in an attempt to preserve as much of the variance as possible (Brown, 1980). Factor rotation is a system that ensures that each factor offers the best vantage point and this process is done through moving the factor axes through factor space (Watts & Stenner, 2012: 142). The original factors are rotated to arrive to the final set of factors. Factor rotation can be performed according to statistical principles (such as Varimax rotation) or it can be performed manually based on judgmental theory or the experience of the researcher. Rotation allows the researcher to examine the viewpoints of the Q sorts from different angles. It is important to mention at this point that rotation only shifts the perspective from where these Q sorts are observed and does not affect the consistency or the relationship between them (Watts & Stenner, 2012). Once the analysis is completed, reports are generated by PQMethod for analysis.

Statements can then be attributed to the original quasi-normal distribution used for data collection to produce the idealised Q sort. This process, combined with the data collected from the follow-up interviews, facilitates data interpretation and allows the researcher to reach a social perspective for each of the extracted factors (Van Exel & de Graaf, 2005).

3.7.1 Test analysis

In order to ensure that the analysis of the collected Q sorts could be performed to satisfaction using PQMethod, a test analysis of six Q sorts from the healthcare providers group was imported into PQMethod from Q Assessor. The 53 providers' statements collected from the same group were also imported to enable the analysis process in PQMethod to begin.

PQMethod manual was consulted to understand how to perform the analysis using the software (Schmolck, 2013).

The correlation matrix of the six Q sorts was first generated. The correlation matrix shows the relationship of each Q sort with every other sort in the test analysis as shown in Table 3.7.

No	SORTS	1	2	3	4	5	6
1	7193	100	7	25	1	21	30
2	7213	7	100	-3	-3	4	-2
3	7214	25	-3	100	27	22	33
4	7267	1	-3	27	100	0	28
5	7274	21	4	22	0	100	4
6	7269	30	-2	33	28	4	100

Table 3.7 Correlation matrix between Q sorts

The lower the correlation between Q sorts, the higher the versatility and difference in opinions that will emerge and that will later exemplify various study factors. It is considered "that the inter-correlation between Q sorts is of great importance because they are the sites from which the factors for the study will be born" (Watts & Stenner, 2012: 98).

According to Brown (1980: 283–284), the significant correlation for this test analysis is calculated according to the formula:

$$\textbf{Significant Correlation} = 2.58 \times [(1/\sqrt{\ (\text{number of statements})}]$$

The total number of statements for the providers group is 53 statements. To calculate the significant loading for the test analysis study, the above formula was used:

$$\textbf{Significant Correlation} = 2.58 \times (1/\sqrt{53}) = 0.35$$

Therefore, the significant correlation is calculated as **0.35**. A correlation between two Q sorts must be **± 0.35** or greater if it to be considered statistically significant in this test analysis (Watts & Stenner, 2012: 202).

The results of the test analysis correlation matrix indicate, for example, that Q sort 2 has low correlation with Q sort 3, Q sort 4 and Q sort 6; it also shows that Q sort 4 has zero similarity with Q sort 5 which is exemplified by the zero correlation between those two Q sorts (see Table 3.7).

Brown (1980) argues that the correlation matrix is complex and confusing in nature and it is only an intermediate step from the identification of factors. As he explains in Q technique studies, little attention is usually given to the correlation matrix itself, which only represents a transitional phase between the raw factors and factor analysis, and which at any rate, is generally too large for direct inspection when more realistic numbers of cases are involved. With n = 50 Q sorts, for example, 1,225 unique correlations would have to be examined. (Brown, 1980: 207).

The main reason for generating correlation matrices is to perform a factor analysis. Factor analysis looks at all the Q sorts in the correlation matrix and statistically determines the number of Q sorts that correlate to one other (Watts & Stenner, 2012: 97). Participants who have configured or ranked their Q sorts in a similar manner will have high correlation and will be allocated to a group or a cluster. By doing this, factor analysis determines how many groups exist and these groupings are the factors from which the study factors will be constructed.

The correlation process is masked to the researcher's eyes, as it is performed "behind the scenes" by the software, (Brown, 1980:213) according to the following formula:

Residual correlation=Original correlation – (Factor loading first Q sort × Factor loading second Q sort)

Brown explains in detail the calculations involved in generating factor and factor scores from the correlation matrix (Brown, 1980: 201-224). However, there are now many software packages readily available to calculate and extract factor scores. PQMethod developed by Schmolk, (2002) is by far the most used software by Q methodologists. PQMethod is also available free to download.

Statistical factor extraction can be done by one of two methods: the Centroid (Factors) method; or Principal Component Analysis (PCA) method. Brown (1980) makes a theoretical argument for the superiority of the Centroid method. The Centroid method is also highly regarded by other Q methodologists (Watts & Stenner, 2012: 99; McKeown, Bruce, and Dan B. Thomas, 2013). The basic function of factor analysis is to cater and account for as much of the study variance as possible (Kline, 1994). In other words, it identifies sizable portions of common or shared meanings and patterns of similarities that the data present. These shared meanings are the extracted factors. The final extracted factors will be much fewer than the Q sorts in the study and it is for this reason factor analysis is also known as a data reduction technique (Watts & Stenner, 2012: 98).

Once the correlation matrix is produced, the un-rotated factor scores were calculated in PQMethod (see Table 3.8). The table shows that factor loading correlations can be both positive and negative. The table also shows factor eigenvalues (EVs) and variance estimates, which highlight the level communality in relation to each factor rather than each Q sort. They are calculated according to the following formula (Brown, 1980: 222):

EV for Factor 1 = (Q sort 1 loading on factor 1)^2+ (Q sort 2 loading on factor 1)^2+

(Q sort 3 loading on factor 1)^2 + … (Q sort N loading on factor 1)^2

Variance for Factor 1 = 100x (EV divide by no of Q sorts in the study)

The process for producing the un-rotated factor matrix involves finding the patterns of similarities and shared common variance among the Q sorts. Common variance is the proportion of the meaning and variability in a Q sort that is held in common by a group (Watts & Stenner, 2012: 100). See Table 3.8.

	Factors					
QSORT	**1**	**2**	**3**	**4**	**5**	**6**
1 **7193**	0.5916	0.432	-0.0333	-0.5139	-0.1799	-0.4073
2 **7213**	0.0011	0.4986	0.845	0.1717	0.0744	0.0481
3 **7214**	0.7453	-0.0483	-0.0991	0.2115	0.6132	-0.1084
4 **7267**	0.5021	-0.5693	0.2654	0.3959	-0.3517	-0.2702
5 **7274**	0.3891	0.5854	-0.3856	0.5006	-0.2614	0.1956
6 **7269**	0.7127	-0.2274	0.1535	-0.347	-0.1015	0.5349
Eigenvalues	1.8168	1.1562	0.9677	0.8659	0.6162	0.5773
% expl.Var.	30	19	16	14	10	10

Table 3.8 Un-rotated factor matrix

Factors that are derived from common variance are called 'common factors' (Brown, 1980). New un-rotated factor extraction involves the identification and removal of a distinct portion of common variance from the correlation matrix. A measure is provided to tell us how typical this Q sort is to the factor (how a particular Q sort is associated and exemplifies a particular factor).

When a factor is extracted from the correlation matrix, a significant portion of the common variance is also removed. Therefore, the relationships and the inter-correlation between the Q sorts change to reflect this diminished influence (Watts & Stenner, 2012). The relationship among Q

sorts will continue to change with each extracted factor and it is quite common that the factor analysis of the first extracted factor will account for the largest amounts of study variance, with the successive extracted factors steadily decreasing in size. Consequently, each extracted factor will greatly reduce the association and weaken the relationship between the remaining Q sorts and the relationship that remains is captured by the residual correlations until no common variance remains to be defected (Watts and Paul Stenner, 2012: 98; 111; 102).

Brown (1980) suggested that the maximum number of factors to be extracted should not exceed the number of Q sorts in the study. For our test study, this would mean only six factors would be extracted (Brown, 1980; Watts & Stenner, 2012). Brown further argues that the purpose of factor analysis is to focus on few selected factors that have significant numbers of variables in the original correlation matrix. He suggests that factors with EVs of more 1.00 are taken, and any factor with EV less than 1.00 is discarded as this will count for less study variance than a single Q sort (Brown, 1980: 223; Watts & Stenner, 2005: note 7). Furthermore, as factor analysis is a data reduction technique that helps bring our attention to those Q sorts that have significant factor loading, Brown argued that a study is considered legitimate if it has two to five factors with a minimum of two Q sorts defining each factor (Brown, 1980: 223). It is usual for the first factor to include the biggest proportion of the variables in the study (Watts & Stenner, 2012: 100).

A quick scan of the un-rotated factors matrix for the test analysis shows that only factors 1 and 2 have EVs of more than 1.00 (1.8168 and 1.1562 respectively) and both account for a total variance of almost 50% (30 and 19). However, a quick decision to discard factors at this stage is not advisable as factors can be validated by rotation (Brown, 1980; Watts & Stenner, 2012).

3.7.2 Factor rotation

Factor rotation is a system that ensures that each factor offers the best vantage point. This process is done through moving the factor axes through factor space (Watts & Stenner, 2012: 142). Rotation can be done statistically by the software (Varimax rotation) or manually by the researcher; the rotation method employed is determined by the nature of the data and the purpose of the study.

Following factor rotation, the factor loadings, the factor eigenvalues and the variances change, but the commonality of the individual Q sorts does not, because factor rotation changes the positions of the factors relative to the Q sorts but the positions of the Q sorts in relation to each other remain unchanged. This means that the viewpoints of participants will not be altered or changed by factor rotation, where "factor rotation shifts our viewpoints not the participants' viewpoints, as the latter remain unchanged from the unrotated factors" (Watts & Stenner; 2012: 127). However, it is suggested that high factor EVs and variances that are in the region of 35–40% is considered to be a sound solution for extraction of factors (Kline, 1994; Watts & Stenner, 2012: 105, Van Exel and de Graf, 2005; Webler et al; 2009).

Although EVs are the most common criterion for the extraction of factors and a good place to start with factor extraction as demonstrated by the acceptance of this technique by the majority of the factor analysis community (Watts & Stenner, 2012:106), this may lead to many meaningless factors being extracted, particularly with studies that have large data (Cattel, 1978; Kline, 1994; Wilson & Cooper, 2008). Therefore, and to help determine the appropriate number of factors to be selected, Brown has suggested applying a further objective parameter, such as that each factor should have at least two significant loadings after extraction to be considered (Brown, 1980: 222-223).

To calculate the significant factor loading, the same formula used to calculate the significant correlation formula (Watts & Stenner, 2012: 202) calculated earlier is applied:

$$\textbf{Significant Correlation} = 2.58 \times (1/\sqrt{53}) = 0.35$$

The significant loading for the providers study (also for the test study) is calculated as **0.35**.

Any Q sort with the **0.35** significant loading or above on more than one factor is classified as 'confounded', which means it would not be considered to load significantly on any of the factors. When this occurs, the factors are rotated to align the position of the factor with other Q sorts. Confounded Q sorts cannot be used in the construction of any factors (Watts & Stenner, 2012: 143). It has been also suggested that when confounding is present, the significant loading can be also raised to a point that confounding does not occur (Watts & Stenner, 2012: 130).

For this test analysis, and by using Varimax rotation, the factors were initially rotated and compared and found that there were not enough Q sorts loading on factors. This was followed by manually flagging Q sorts that equaled or exceeded the calculated significant loading value of **0.35**. In order to see how many Q sorts are associated with each of the factors at each rotation, the rotation and the manual flagging was performed on 6, 5, 4, 3 and 2 factor solutions. See Table 3.9.

Rotating on six factors, factors 1, 2, 4, 5 and 6 had only one Q sort with significant loading of **0.35** and no Q sort associated with factor 3.

Rotating on five factors resulted in two Q sorts associated with factor 1 and factor 4, one Q sort associated with factors 2 and 5, while no Q sort was associated with factor 3.

Rotating on four factors resulted in three Q sorts associated with factor 1, two Q sorts with factor 2, no Q sort with factor 3 and two Q sorts with factor 4.

Rotating on three factors resulted in 3 Q sorts associated with factors 1 and 2, while one Q sort was associated with factor 3.

Rotating on two factors, three Q sorts were associated with each factor.

Varimax rotation with	No. significant loaded Q sorts on Factor 1	No. significant loaded Q sorts on Factor 2	No. significant loaded Q sorts on Factor 3	No. significant loaded Q sorts on Factor 4	No. significant loaded Q sorts on Factor 5	No. significant loaded Q sorts on Factor 6
6 Factors	1	1	0	1	1	1
5 Factors	2	1	0	2	1	
4 Factors	3	2	0	2		
3 Factors	3	3	1			
2 Factors	3	3				

Table 3.9 Rotation comparison table with significant loading of 0.35

When the significant factor loading was raised from **0.35** to **0.4** to reduce the confounding on 6, 5, 4 and 3 factor rotations, the criteria of more than two significant loading Q sorts per factor was not satisfied. However, when the two-factor rotation was performed by manually selecting Q sorts with the original factor loading of **0.35**, three Q sorts were exemplified with each of the two factors.

3.7.3 Factor extraction

The two-factor solution with a significant loading of **0.35** produced no confounded Q sorts and this solution has accounted for all of the six Q sorts in the study. Factor 1 accounted for (Q sorts 3, 4 and 6) and factor 2 accounted for (Q sorts 1, 2 and 5). Also, both factors have more than two Q sorts with the calculated significant factor loading of **0.35** or above associated

with each of them as per the criteria set by Brown, in which he suggested that at least two Q sorts need to significantly load on each of the factors in order for that factor to be selected (Brown, 1980: 22). The two factors combined account for 49% of the total study variance and this satisfied the criteria that the factors selected should be equal to or in excess of 35–40% of total variance (Watts & Stenner, 2012: 105; Kline, 1994; Brown, 1980: 223; Watts & Stenner; 2012).

Therefore, it can be established that the test study is considered legitimate and the two-factor solution can be qualified for further analysis.

Table 3.10 below shows the manually flagged Q sorts with significant loading of **0.35** and above and a total study variance of 49%, while table 3.11 shows the defining Q sorts associated with each factor.

QSORT	1	2
1 **7193**	**0.3477**	**0.6447**X
2 **7213**	**-0.2139**	**0.4504**X
3 **7214**	**0.6934**X	**0.2775**
4 **7267**	**0.6984**X	**-0.2974**
5 **7274**	**0.0989**	**0.6960**X
6 **7269**	**0.7411**X	**0.1019**
% expl.Var.	**28**	**21**

Table 3.10 Test Factor matrix with an X indicating a defining sort

Factor number	Q sorts numbers	Total	Cumulative total
F1	3 ; 4; 6	3	3
F2	1; 2; 5	3	6
Confounded	0	0	6
Non-significant	0	0	6

Table 3.11 Factor defining Q sorts table for the two extracted factors

The correlation for the providers study has been calculated as **±0.35**, (Watts & Stenner, 2012: 202). Therefore, the correlation must be **±0.35** or greater to be

statistically significant for the test study, the two-factor solution shows low correlation between the two extracted factors (see Table 3.12) and confirms that the two factors represent a separate viewpoint each.

	1	2
1	1.0000	0.2092
2	0.2092	1.0000

Table 3.12 Correlation Matrix

3.8 Q Factor interpretation

Once factor analysis is completed using PQMethod, the 'Q analyse' option is then selected from the main menu to generate reports that facilitate the factor interpretation. These reports are:

- Ranked statement totals for each factor (the ranking of each item is compared across factors)
- Normalised factor scores. (Z scores listed from highest or most positive Z score at the top to the lowest or most negative at the bottom)
- Descending array of differences between factors (highlighting item ranking differences between specific pairs of factors)
- Factor Q sort value for each statement
- Factor Q sort values for statements sorted from most disagreement to most agreements
- Factor characteristics
- Standard errors for differences in normalised factor scores
- Distinguishing statements for factors (the items the factor has ranked in a significantly different fashion when compared to all other study factors)

- Consensus statements that do not distinguish between any pair of factors (those statements that do not distinguish between any pair of factors)

3.8.1 Factor array

The next step that facilitates the interpretation process is to create a factor array for each extracted factor. A factor array is also known as the idealised Q sort.

Factor array (see Table 3.14) is a single Q sort that is configured to represent the viewpoint of a factor. It conforms to the same distribution and by reference to the size that was originally used for data collection.

The factor array contains the weighted Z scores. To create the idealised array for a factor, the ranking of each statement based on its Z scores is used and the Z score report is generated by PQMethod (Watts & Stenner, 2012: 149).

Table 3.13 shows the Z scores for factor 1 and the ranking is used to create the factor 1 array, shown in Table 3.14 (Watts & Stenner, 2012: 141).

For the test study, the statements ranked 1 and 2 will be under +5; statements ranked 3, 4 and 5 will be under +4; statements ranked 6, 7, 8, 9 and 10 will be under +3; and the remaining statements will be arranged by the same process through to the statements ranked 52 and 53, which will be under -5. F2 array can also be generated using the same process.

Upon generation of factor array for each extracted factor, and to maintain a holistic approach to data interpretation, the use of a 'crib sheet' is suggested (Watts & Stenner, 2012: 150). The use of the crib sheet also provides a systematic way to interpret data that reduces the risk of data being missed in the process.

The most agreed and the least agreed statements that are also reported by PQMethod can also support the interpretation process. See Tables 3.15 and 3.16.

It has also been suggested that it is practical to use a crib sheet to facilitate a systematic approach to factor interpretation (Watts & Stenner, 2012). The crib sheet is referred to as a "security blanket" that ensures nothing will be missed in the interpretation stage and therefore delivers on Brown's holism concept (Watts & Stenner, 2012: 150).

This pilot test was necessary to ensure that the data could be analysed using PQMethod, that a viable factor solution could be extracted, that the process of Q analysis was explained and that the steps of factor interpretation were highlighted.

The next step in this research is to analyse the healthcare provider and healthcare consumer groups in full and extract viable factor solutions for full interpretation and social discourse using the various PQMethod reports and the follow up interviews. No interpretation for the test analysis is warranted using only 6 Q sorts, as a full interpretation will be performed on the entire P set for each study group once the analysis is completed in the following chapters. ■

Table 3.13 Z scores for test analysis

Rank	State-ment No.	Statement	Z Score
1	27	Educating mothers about lifestyle choices is an important measure that can improve the health of other family members	2.170
2	6	There is little or no coordination of health communication messages in Qatar amongst various government entities	1.544
3	42	The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one-off" events	1.530
4	14	Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of healthcare issues better than individual organisations each delivering their own messages	1.296
5	30	Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles	1.215
6	18	Health campaigns should target young people, because advice is more effective if it is learnt at an early age	1.125
7	36	It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age	1.087
8	38	There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar	1.059
9	45	Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles	0.990
10	17	Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits	0.983
11	31	The responsibilities between health entities with regards to public health promotion and public health education is not clear in Qatar	0.974

Rank	State-ment No.	Statement	Z Score
12	16	Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar	0.955
13	34	Healthcare promotion messages alone are not effective in changing lifestyles behaviour of people, government intervention is also necessary, such as in regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices	0.749
14	24	Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise	0.746
15	26	The quality and accuracy of health information given to the public must be regulated	0.710
16	32	Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health	0.710
17	28	The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits	0.703
18	25	Health literacy is not measured in Qatar so healthcare communication is “hit and miss”	0.686
19	35	Schools play an important role in raising awareness of healthy lifestyle habits	0.586
20	33	The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population	0.477
21	13	Health communication campaigns should be targeted at mothers	0.431
22	46	Food labelling in Qatar should include nutritional facts, serving sizes and calorie counts	0.415
23	20	Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate	0.404

Rank	State-ment No.	Statement	Z Score
24	4	Qatar has no baseline upon which it can judge the success of its healthcare communication efforts	0.348
25	41	The government should impose a ban on fast food advertising in Qatar	0.341
26	3	People are easily influenced by the eating habits of their friends and colleagues	0.125
27	10	The quality of health communication campaigns in Qatar is generally poor	0.102
28	44	The “Think Pink” walk, “Wheels and Heels” and initiatives about breastfeeding are campaigns I recall but they did not influence my behaviour	0
29	11	Healthcare communication in Qatar is based on dictating messages, not on community involvement	-0.123
30	34	There is no cross-government coordination in Qatar to encourage people to improve their lifestyles	-0.234
31	21	Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long-term value of such investment	-0.331
32	48	The “Step into Health” campaign that encouraged walking is an ongoing success	-0.334
33	53	Social media is the best medium for raising awareness of health issues in Qatar	-0.411
34	2	The “*Kulluna*” health promotion campaign messages were clear and have affected consumer behaviour in a positive manner	-0.540
35	43	Qatar is making good use of the country’s sports facilities to encourage people to exercise regularly	-0.582
36	39	Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles	-0.644

Rank	State-ment No.	Statement	Z Score
37	1	Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar	-0.656
38	9	The general awareness of current health communication campaigns is very low in Qatar	-0.679
39	51	The "*Kulluna*" health communication campaign provided much useful information to the public	-0.749
40	52	The "Your Health first" campaign is an example of positive collaboration between health institutions	-0.788
41	19	Healthcare entities in Qatar have no preapproved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns	-0.807
42	23	Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health	-0.830
43	47	The current "anti-smoking" campaigns are effective in raising public awareness	-0.839
44	12	Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea	-0.842
45	5	Healthcare communication in Qatar focuses on disease literacy and not health literacy	-0.858
46	50	The "*Kulluna*" health communication campaign was very effective	-0.913
47	7	Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting	-1.052
48	49	Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective	-1.059
49	29	The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful	-1.533

Rank	State-ment No.	Statement	Z Score
50	22	Promoting public health is a new idea for Qatar	-1.533
51	15	Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive	-1.627
52	40	Lifestyle-based health campaigns are not supported by policy	-2.135
53	8	No measures to improve health literacy have been implemented in Qatar	-2.344

Table 3.13 Z scores for test analysis

Disagree					**Uncertain**					**Agree**
-5	-4	-3	**-2**	**-1**	**0**	**1**	**2**	3	4	5
40	29	5	51	48	20	32	17	18	42	27
8	22	50	52	53	4	28	31	36	14	6
	15	7	19	2	41	25	16	38	30	
		49	23	43	3	35	37	45		
			47	39	10	33	24			
			12	1	44	13	26			
				9	11	46				
					34					
					21					

Table 3.14 Factor array for Factor 1 for the test analysis

Rank	State No.	Statement	Z Score	Rank
1	27	Educating mothers about lifestyle choices is an important measure that can improve the health of other family members	2.170	+5
2	6	There is little or no coordination of health communication messages in Qatar amongst various government entities	1.544	+5
3	42	The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one-off" events	1.530	+4
4	14	Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of healthcare issues better than individual organisations each delivering their own messages	1.296	+4
5	30	Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles	1.215	+4
6	18	Health campaigns should target young people, because advice is more effective if it is learnt at an early age	1.125	+3
7	36	It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age	1.087	+3
8	38	There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar	1.059	+3
9	45	Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles	0.990	+3

Table 3.15 Most agreed with statements

Rank	State No.	Statement	Z Score	Rank
45	5	Healthcare communication in Qatar focuses on disease literacy and not health literacy	-0.858	-3
46	50	The "*Kulluna*" health communication campaign was very effective	-0.913	-3
47	7	Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting	-1.052	-3
48	49	Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective	-1.059	-3
49	29	The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful	-1.533	-4
50	22	Promoting public health is a new idea for Qatar	-1.533	-4
51	15	Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive	-1.627	-4
52	40	Lifestyle-based health campaigns are not supported by policy	-2.135	-5
53	8	No measures to improve health literacy have been implemented in Qatar	-2.344	-5

Table 3.16 Least agreed with statements

Chapter 4

Analysis and results

This chapter provide details of the analysis of the data collected from the healthcare providers and the healthcare consumers groups. The data was collected using Q Assessor and was imported into the PQMethod software tool for analysis, at which point the various factors were extracted and interpreted.

4.1 Healthcare providers study

The study link was given to 62 subjects, and a total of 48 participants agreed to take part in the study. The P set of 48 healthcare providers completed the study, which comprised 53 statements. This was therefore consistent with the suggestion that the number of participants in the study be fewer than the number of items in the Q (Stenner and Watts, 2012: 73).

The participants in the healthcare providers group were from private and public healthcare organisations, with reasonable proficiency in the English language and who had more than two years of experience in their current professions. The group was comprised of medical doctors, nurses, policy makers, managers and healthcare communication specialists. The complete providers Q sort is shown in Appendix 3.

4.1.1 Factor extraction

The correlation matrix of all Q sorts was first generated. The correlation shows the relationship of each Q sort with every other sort—see appendix 9. The factor loading of **0.35** used in the test analysis was adopted here too. The unrotated factors were first inspected manually to identify at least four Q

sorts with significant loading on each factor (Watts & Stenner, 2012). Using Varimax rotation and PCA, the factors were rotated and 7, 6, 5 and 4 solutions were examined and compared.

With the seven-factor solution, a variance of 52% was produced, and at **0.35** significant loading many Q sorts were confounded. When the significant loading was raised to **0.40** in an attempt to reduce the number of confounded Q sorts, fewer than four Q sorts were found to have significant loading on three factors.

With a six-factor solution that produced a variance of 39% and at a significant loading of **0.35**, only two Q sorts were significantly loaded on factor 6 and many Q sorts were confounded on the other factors.

With a five-factor solution the total variance was 43% and at a significant loading of **0.35**, 19 Q sorts were confounded; but when the loading was raised to **0.40**, only seven Q sorts were confounded, leaving more than four Q sorts exemplifying each of the five factors.

Rotation at 4 factor solution produced a variance of 34%, which is less than the recommended variance level for a Q study (Watts & Stenner, 2012). The percentage of variance for the 3 and 2 factor solutions was also below the recommended level and these solutions were discarded.

4.1.2 Factor solution

The 5 factor solution with the raised significant loading to 0.40 and with a variance of 43% has produced more than four Q sorts, significantly loading on each factor; this solution has only 7 confounded Q sorts. See Table 4.1.

Factor Number	Q sorts	Total	Cumulative Total
F1	7195; 7244; 7251; 7267; 7272; 7346	6	6
F2	7217; 7233; 7226; 7282; 7276; 7343	6	12
F3	7215; 7247; 7241; 7250; 7194; 7281; 7294	7	19
F4	7193; 7206; 7269; 7301; 7228; 7312; 7345	7	26
F5	7227; 7189; 7265; 7283; 7275; 7344; 7284	7	33
Confounded	7285; 7232; 7296; 7322; 7336; 7347; 7244	7	40
Non-significant	7190; 7213; 7214; 7274; 7321; 7339; 7256; 7349	8	48

Table 4.1 Factor defining Q sorts table for the five extracted factors

Table (4.2) shows the defining Q sort associated with each of the five factors, and table (4.3) presents the defining factors, including those confounded, while the correlation between the five factors is shown in Table 4.4.

Q analysis was performed in PQMethod after the five factors were extracted. The factor scores (Z scores) for each statement in each factor were calculated and given a rank by PQMethod.

4.1.3 Factor interpretation

There is no set strategy for factor interpretation (Brown, 1990: 247). However, Watts and Steener have argued that the lack of a set strategy or an interpretive system can be problematic (Watts & Stenner, 2012: 148-150). To maintain consistency, the 'crib sheet' method along with the objectively structured factor array were used in interpretation process. The crib sheet provided a holistic and consistent way of factor interpretation. Factor arrays were configured from the Z scores tables produced by PQMethod (see Appendices 10 to 14), along with the statement rankings from Table 4.5.

Loadings					
QSORT	**1**	**2**	**3**	**4**	**5**
1 7190	-0.0694	0.1896	0.3863	-0.0459	0.1286
2 7193	0.1632	0.1211	0.0668	0.6959X	-0.2566
3 7213	-0.1465	-0.0172	0.6974	0.0290	-0.0689
4 7214	0.3621	0.0821	0.2928	0.3345	0.3326
5 7206	-0.3521	0.0050	0.2639	0.4321X	0.1016
6 7217	-0.0014	0.6766X	-0.0623	0.2803	0.0527
7 7227	0.0290	0.0975	-0.1889	0.1985	0.7294X
8 7195	0.4726X	0.2683	0.1792	0.3052	-0.0684
9 7215	0.0984	0.1177	0.4522X	-0.1030	0.2681
10 7189	0.1283	0.0616	0.0785	0.3858	0.5155X
11 7244	0.4060X	-0.0072	0.2681	0.4336X	0.1703
12 7247	0.1436	0.0940	0.5913X	0.1988	0.0155
13 7241	0.3036	0.3806	0.4864X	0.0216	-0.0202
14 7233	0.0099	0.6637X	-0.0724	0.1145	-0.1386
15 7251	0.6270X	0.2031	0.2578	0.1672	0.0551
16 7226	0.0579	0.5313X	0.1651	0.1374	0.3584
17 7267	0.5498X	0.3498	0.0153	-0.0742	0.2250
18 7250	-0.0631	-0.3650	0.5509X	0.2102	0.1989
19 7265	0.1695	-0.0016	0.0742	-0.0483	0.5255X
20 7194	0.0353	0.2780	0.6944X	0.1612	-0.0804
21 7272	0.6076X	0.3085	0.3839	-0.0029	-0.0523
22 7274	0.2790	0.1264	0.0899	0.0638	0.0885
23 7285	-0.0738	0.2022	0.4057X	0.4254X	0.2474
24 7281	0.3699	-0.0088	0.5465X	0.2823	0.2058
25 7282	0.0176	0.5088X	-0.0212	-0.1243	0.2811
26 7232	-0.0718	0.5631X	0.2414	0.0000	0.4293X
27 7269	0.1605	0.3702	0.1301	0.4562X	0.2048
28 7283	-0.0200	-0.1121	0.2690	-0.1078	0.5002X
29 7296	0.4403X	-0.0891	0.5674X	0.1620	-0.0626

Loadings					
QSORT	**1**	**2**	**3**	**4**	**5**
30 7301	0.3603	0.0562	-0.0743	0.4312X	0.1563
31 7228	-0.1033	0.1810	0.0511	0.5909X	0.2113
32 7276	0.2016	0.6284X	0.3822	0.3025	0.0475
33 7294	0.1795	-0.1656	0.5556X	0.0539	-0.0240
34 7321	0.0468	0.3146	0.4891	0.1890	0.3512
35 7322	0.1331	0.6181X	0.2544	0.4302X	-0.0276
36 7336	0.4166X	0.3981X	-0.1069	0.2075	0.1632
37 7275	0.1461	0.3334	-0.0803	-0.0651	0.4044X
38 7339	-0.2443	-0.0001	0.2408	0.3809	0.3756
39 7256	0.1856	-0.0973	-0.0758	0.0180	-0.0508
40 7332	0.1096	0.0696	-0.0414	0.4549X	-0.0476
41 7344	-0.1373	0.2698	0.1164	-0.0159	0.4660X
42 7312	0.2951	0.0400	0.1670	0.5537X	-0.1057
43 7343	0.3823	0.5207X	0.3096	-0.1214	0.3293
44 7345	0.0903	-0.0302	0.1233	0.5500X	0.0269
45 7346	0.7214X	-0.2613	-0.0651	0.1497	0.0598
46 7347	0.5087X	0.0217	0.0878	0.4269X	0.1711
47 7284	0.2213	0.3024	-0.0230	0.2843	0.4909X
48 7349	0.2151	0.0108	-0.2509	-0.1555	-0.1333
% expl.Var.	8	9	10	9	7
Eigenvalue	4.05	4.48	4.79	4.23	3.47

Table 4.2 Provider Factor matrix with an X indicating a defining sort

Factors	1	2	3	4	5
No. of Defining Variables	9	9	9	12	8
Average Rel. Coef.	0.800	0.800	0.800	0.800	0.800
Composite Reliability	0.973	0.973	0.973	0.980	0.970
S.E. of Factor Z-Scores	0.164	0.164	0.164	0.143	0.174

Table 4.3 Factor characteristics

	1	2	3	4	5
1	**1.0000**	**0.4029**	**0.4995**	**0.5312**	**0.2765**
2	**0.4029**	**1.0000**	**0.3565**	**0.4921**	**0.4835**
3	**0.4995**	**0.3565**	**1.0000**	**0.5053**	**0.2105**
4	**0.5312**	**0.4921**	**0.5053**	**1.0000**	**0.3189**
5	**0.2765**	**0.4835**	**0.2105**	**0.3189**	**1.0000**

Table 4.4 Correlations between Factor Scores

No.	Statement	Factor Arrays				
		1	2	3	4	5
1	Qatar is raising awareness of healthy lifestyles through a variety 0f programs and activities that target most or all of the different population group in Qatar.	+2	-4	+1	-2	-4
2	The "*Kulluna*" health promotion campaign messages were clear and have affected consumer behaviour in a positive manner.	-1	-5	0	-4	-2
3	People are easily influenced by the eating habits of their friends and colleagues.	0	+1	+2	0	-1
4	Qatar has no baseline upon which it can judge the success of its healthcare communication efforts.	-1	+1	0	-1	-1
5	Healthcare communication in Qatar focuses on disease literacy and not health literacy.	-2	-1	-4	-4	+2
6	There is little or no coordination of health communication messages in Qatar amongst the various government entities.	-2	0	-2	0	0
7	Anti-smoking fear advertising will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting.	0	-2	-1	0	-3
8	No measures to improve health literacy have been implemented in Qatar	-5	-2	-5	-5	-3
9	The general awareness of current health communication campaigns is very low in Qatar.	-3	+2	-2	-1	0
10	The quality of health communication campaigns in Qatar is generally very poor.	-4	+1	-3	-2	+2
11	Health care communication in Qatar is based on dictating messages, not on community involvement.	-3	-1	0	+1	-1
12	Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea.	0	+1	+2	+2	-2
13	Health communication campaigns should be targeted at mothers.	+3	0	-1	+1	-1

No.	Statement	Factor Arrays				
		1	2	3	4	5
14	Partnerships through corporate social responsibility program can help to coordinate messages and to raise awareness of healthcare issues better than individual organisations, each delivering their own messages.	+5	+4	+4	+2	+3
15	Very little planning is given to health promotion campaigns	-2	-1	-2	-3	+1
16	Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness levels amongst various communities in Qatar.	+5	+3	+5	+2	+3
17	Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits.	+1	+2	0	+1	-4
18	Health campaigns should target young people, because advice is more effective if it is learnt in an early age.	+2	+2	-1	+5	0
19	Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns.	-2	-2	-1	-1	-1
20	Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate.	-1	-3	+4	+3	+1
21	Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long term value of such investment.	-1	0	-2	-3	+1
22	Promoting public health is a new idea for Qatar.	-5	+1	-4	+1	-5

No.	Statement	Factor Arrays				
		1	2	3	4	5
23	Health promotion campaigns in Qatar do not last long enough to make lasting improvement to people's health.	+1	0	0	0	+2
24	Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise.	+1	0	-4	+2	0
25	Health literacy is not measured in Qatar so healthcare communication is a "miss and hit'.	-1	+2	0	+1	+1
26	The quality and accuracy of health information given to the public must be regulated.	+4	+4	+1	+1	+2
27	Educating mothers about lifestyle choices is an important measure that could improve the health of other family members.	+4	+1	+5	+5	+4
28	The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits.	+2	+5	+3	+4	+2
29	The organ donation promotional campaign that was linked to The Holy Quran was extremely effective and successful.	+1	-1	+1	-2	0
30	Qatar should devote a larger budget to improving health literacy and promoting health lifestyles.	+2	+2	+2	-1	0
31	The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar.	0	0	+1	-4	-2
32	Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health.	-2	0	0	-2	+5
33	The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population.	+1	+3	-1	+2	+3
34	There is no cross-government coordination in Qatar to encourage people to improve their lifestyle.	-3	+1	-3	-3	0
35	Schools play an important role in raising awareness of healthy lifestyle habits.	+3	+5	+2	+2	+1

No.	Statement	Factor Arrays				
		1	2	3	4	5
36	It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age.	+1	+4	+4	+3	0
37	Healthcare promotion messages alone are not effective in changing lifestyle behaviours of people, government intervention is also necessary, such as in regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices.	0	+3	+3	+4	+3
38	There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar.	+3	+3	-2	0	+5
39	Local health entities have more interest in impressing the public with fancy new hospitals than encoring people to change their lifestyle.	-4	-1	+2	+1	+4
40	Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick and visible results.	-3	-1	-1	0	+1
41	The government should impose a ban on fast food advertising in Qatar.	+1	-3	-5	-1	+4
42	The authorities in Qatar should organise events that encourage healthy lifestyle habits on a regular, ongoing basis and not just as “one-off’ events.	+3	0	+3	+3	+1
43	Qatar is making good use of the country’s sports facilities to encourage people to exercise regularly.	0	-5	+1	0	-2
44	The "Think Pink" walk, "Wheels and Heels" and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour.	0	-2	+1	0	-1
45	Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles.	-2	0	+3	0	-1

No.	Statement	Factor Arrays				
		1	2	3	4	5
46	Food labelling in Qatar should include nutrition facts, serving sizes, and calorie count.	+4	+2	+2	+4	+2
47	The current 'anti-smoking' campaigns are effective in raising public awareness.	-1	-2	-3	-3	-5
48	'Step into Health' campaign that encouraged walking is an on success.	+1	-3	0	-1	-4
49	Lack of expertise in the health communication field is obvious in Qatar and this means that health promotion and health education are not effective.	-4	-1	-2	-2	0
50	The '*Kulluna*' health communication campaign was very effective.	0	-4	-1	-2	-3
51	The '*Kulluna*' health communication campaign provided much useful information to the public.	0	-3	+1	-5	-3
52	The 'Your Health first' campaign is an example of positive collaboration between health institutions.	-1	-2	0	-1	-2
53	Social media is the best medium for raising awareness of health issues in Qatar.	+2	-4	-3	+3	-2

Table 4.5 Healthcare providers factor Q sort values for each statement (statements ranking table)

4.1.3.1 Factor 1 interpretation (F1)

The rank for each statement for Factor 1 was compared against the rank of statements of Factors 2, 3, 4, and 5 and a crib sheet was created.

The crib sheet includes items ranked (+5) in F1, items ranked higher in F1 than all other factors, items ranked lower in F1 compared to other factors, and factors ranked (-5) in F1.

When comparing the items with ranks higher and lower than F1, the item was included in the crib sheet even when the score was tied with other factors. The idealised Q sort for F1 is represented in Table 4.6.

Disagree					Uncertain					Agree
-5	-4	-3	-2	-1	0	1	2	3	4	5
22	39	11	19	47	31	23	28	35	27	14
8	10	40	6	52	37	41	33	42	46	16
	49	34	5	4	12	17	30	38	26	
		9	15	20	3	36	1	13		
			45	2	43	29	18			
			32	21	51	48	53			
				25	44	24				
					7					

Table 4.6 Factor array for factor 1

Crib sheet for healthcare providers: Factor 1

Items ranked +5 for factor 1

Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of health care issues better than individual organisations, each delivering their own messages (14; +5)

Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar (16; +5)

Items ranked higher in factor 1 compared to other factors, with their corresponding scores

Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar (1; +2)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (7; 0)

Health communication campaigns should be targeted at mothers (13; +3)

The quality and accuracy of health information given to the public must be regulated (26; +4)

The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful (29; +1)

Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30; +2)

The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one -off" events (42; +3)

Food labelling in Qatar should include nutrition facts, serving sizes and calorie count (46; +4)

The current "Anti-smoking" campaigns are effective in raising public awareness (47; -1)

'Step into Health' campaign that encouraged walking is an ongoing success (48; +1)

The '*Kulluna*' health communication campaign was very effective (50; 0)

Items ranked lower in factor 1 compared to other factors, with their corresponding scores

Qatar has no baseline upon which it can judge the success of its healthcare communication efforts (4; -1)

There is little or no coordination of health communication messages in Qatar amongst various government entities (6; -2)

The general awareness of current health communication campaigns is very low in Qatar (9; -3)

The quality of health communication campaigns in Qatar is generally poor (10; -4)

Health care communication in Qatar is based on dictating messages, not on community involvement (11; -3)

Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns (19; -2)

Health literacy is not measured in Qatar so healthcare communication is a 'hit and miss' (25; -1)

The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits (28; +2)

Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health (29; -2)

There is no cross-government coordination in Qatar to encourage people to improve their lifestyles (34; -3)

Healthcare promotion messages alone are not effective in changing lifestyles behaviour of people, government intervention is also necessary, such as in regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices (37; 0)

Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles (39; -4)

Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results (40; -3)

Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles (45; -2)

Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective (47; -4)

Items ranked -5 for factor 1

No measures to improve health literacy have been implemented in Qatar (8; -5)

Promoting public health is a new idea for Qatar (22, -5)

Other items of importance (with 0 or near 0 ranking)

The '*Kulluna*' health promotion campaign messages were clear and have affected consumer behaviour in a positive manner (2; -1)

People are easily influenced by the eating habits of their friends and colleagues (3; 0)

Healthcare communication in Qatar focuses on disease literacy and not health literacy (5; -2)

Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea (9; 0)

Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive (15; -2)

Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17; +1)

Health campaigns should target young people, because advice is more effective if it is learnt at an early age (18; +2)

Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate (19; -1)

Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long term value of such investment (20; -1)

Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health (23; +1)

Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise (24; +1)

The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar (29; 0)

The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population (30; +1)

It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age (36; +1)

The government should impose a ban on fast food advertising in Qatar (39; +1)

Qatar is making good use of the country's sports facilities to encourage people to exercise regularly (42; 0)

The "Think Pink" walk, "Wheels and Heels" and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour (43; 0)

The '*Kulluna*' health communication campaign provided much useful information to the public (51; 0)

The 'Your Health first" campaign is an example of positive collaboration between health institutions (52; -1)

Social media is the best medium for raising awareness of health issues in Qatar (53; +2)

4.1.3.2 Factor 2 interpretation (F2)

The rank for each statement for Factor 2 was compared against the rank of statements of Factor 1, 3, 4, and 5 and a crib sheet was created.

The crib sheet includes the items ranked (+5) in F2, items ranked higher in F2 than all other factors, items ranked lower in F2 compared to other factors, and factors ranked (-5) in F2. When comparing the items with ranks higher and lower than F2, the item was included in the crib sheet even when the score was tied with other factors.

By using statements rank from Table 4.5, and the Z score for F2, the idealised Q sort was created as in Table 4.7.

Disagree					Uncertain					Agree
-5	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**
2	50	20	52	11	42	27	46	16	14	35
43	53	48	7	40	31	12	17	37	36	28
	1	41	8	5	24	4	30	33	26	
		51	19	29	6	34	18	38		
			44	39	32	10	25			
			47	15	21	22	9			
				49	23	3				
					13					
					45					

Table 4.7 Factor array for Factor 2

Crib sheet for Providers Factor 2

Items ranked +5 for factor 2

Schools play an important role in raising awareness of healthy lifestyle habits (35; +5)

The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits (28; +5)

Items ranked higher in factor 2 compared to other factors, with their corresponding scores

Qatar has no baseline upon which it can judge the success of its healthcare communication efforts (4; +1)

There is little or no coordination of health communication messages in Qatar amongst various government entities (6; 0)

No measures to improve health literacy have been implemented in Qatar (8; -2)

The general awareness of current health communication campaigns is very low in Qatar (9; +2)

Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17; +2)

Promoting public health is a new idea for Qatar (22; +1)

Health literacy is not measured in Qatar so healthcare communication is a 'hit and miss' (25; +2)

The quality and accuracy of health information given to the public must be regulated (26; +4)

Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30; +2)

The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population (33; +3)

There is no cross-government coordination in Qatar to encourage people to improve their lifestyles (34; +1)

It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age (36; +4)

Items ranked lower in factor 2 compared to other factors, with their corresponding scores

Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar (1; -4)

Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns (19; -2)

Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate (20; -3)

Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health (23; 0)

Educating mothers about lifestyle choices is an important measure that can improve the health of other family members (27; +1)

The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one -off" events (42; 0)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour (44; -2)

Food labelling in Qatar should include nutrition facts, serving sizes and calorie count (46; +2)

The '*Kulluna*' health communication campaign was very effective (50; -4)

The 'Your Health first' campaign is an example of positive collaboration between health institutions (52; -2)

Social media is the best medium for raising awareness of health issues in Qatar (53; -4)

Items ranked -5 for factor 2

The '*Kulluna*' health promotion campaign messages were clear and have affected consumer behaviour in a positive manner (2; -5)

Qatar is making good use of the country's sports facilities to encourage people to exercise regularly (43; -5)

Other items of importance (with 0 or near 0 ranking)

People are easily influenced by the eating habits of their friends and colleagues (3; +1)

Healthcare communication in Qatar focuses on disease literacy and not health literacy (5; -1)

Anti-smoking 'fear advertising will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (7; -2)

The quality of health communication campaigns in Qatar is generally poor (10; +1)

Health care communication in Qatar is based on dictating messages, not on community involvement (11; -1)

Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea (12; +1)

Health communication campaigns should be targeted at mothers (13; 0)

Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive (15; -1)

Health campaigns should target young people, because advice is more effective if it is learnt at an early age (18; +2)

Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have

financial approval authority and who may not understand the long term value of such investment (21; 0)

Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise (24; 0)

The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful (29; -1)

The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar (31; 0)

Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health (32; 0)

Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles (39; -1)

Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results (40; -1)

Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles (45; 0)

The current 'Anti-smoking' campaigns are effective in raising public awareness (47; -2)

Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective (49; -1)

4.1.3.3 Factor 3 interpretation (F3)

The rank for each statement for Factor 3 was compared against the rank of statements of Factor 1, 2, 4, and 5 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F3, items ranked higher in F3 than all other

factors, items ranked lower in F3 compared to other factors, and factors ranked (-5) in F3.

When comparing the items with ranks higher and lower than F3, the item was included in the crib sheet even when the score was tied with other factors. By using statements rank from table (4.5), and the Z score for F3, the idealised Q sort was created as in Table 4.8.

Disagree					Uncertain					Agree
-5	-4	-3	-2	-1	0	1	2	3	4	5
8	22	53	49	40	32	31	46	28	36	27
41	24	34	21	33	25	26	39	45	20	16
	5	10	38	18	48	1	35	37	14	
		47	9	50	17	43	12	42		
			6	7	2	44	30			
			15	13	4	51	3			
				19	11	29				
					23					
					52					

Table 4.8 Factor array for Factor 3

Crib sheet for Providers Factor 3

Items ranked +5 for factor 3

Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar (16; +5)

Educating mothers about lifestyle choices is an important measure that can improve the health of other family members (27; +5)

Items ranked higher in factor 3 compared to other factors, with their corresponding scores

The '*Kulluna*' health promotion campaign messages were clear and have affected consumer behaviour in a positive manner (2; 0)

People are easily influenced by the eating habits of their friends and colleagues (3; +2)

Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea (12; +2)

Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns (19; -1)

Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate (20; +4)

The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful (29; +1)

Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30; +2)

The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar (31; +1)

It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age (36; +4)

The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one -off" events (42; +3)

Qatar is making good use of the country's sports facilities to encourage people to exercise regularly (43; +1)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour (44; +1)

Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles (45; +3)

The '*Kulluna*' health communication campaign was very effective (51; +1)

The '*Kulluna*' health communication campaign provided much useful information to the public (52; 0)

Items ranked lower in factor 3 compared to other factors, with their corresponding scores

Healthcare communication in Qatar focuses on disease literacy and not health literacy (5; -4)

There is little or no coordination of health communication messages in Qatar amongst various government entities (6; -2)

Health communication campaigns should be targeted at mothers (13; -1)

Health campaigns should target young people, because advice is more effective if it is learnt at an early age (18; -1)

Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health (23; 0)

Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise (24; -4)

The quality and accuracy of health information given to the public must be regulated (26; +1)

The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population (33; -1)

There is no cross-government coordination in Qatar to encourage people to improve their lifestyles (34; -3)

There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar (38; -2)

Food labelling in Qatar should include nutrition facts, serving sizes and calorie count (46; +2)

Items ranked -5 for factor 3

No measures to improve health literacy have been implemented in Qatar (8; -5)

The government should impose a ban on fast food advertising in Qatar (41; -5)

Other items of importance (with 0 or near 0 ranking)

Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar (1; +1)

Qatar has no baseline upon which it can judge the success of its healthcare communication efforts (4; 0)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (7; -1)

The general awareness of current health communication campaigns is very low in Qatar (9; -2)

Health care communication in Qatar is based on dictating messages, not on community involvement (11; 0)

Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive (15; -2)

Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17; 0)

Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long term value of such investment (21; -2)

Health literacy is not measured in Qatar so healthcare communication is a 'hit and miss' (25; 0)

Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health (32; 0)

Schools play an important role in raising awareness of healthy lifestyle habits (35; +2)

Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles (39; +2)

Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results (40; -1)

The 'Step into Health' campaign that encouraged walking is an ongoing success (48; 0)

Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective (49; -2)

The '*Kulluna*' health communication campaign was very effective (50; -1)

4.1.3.4 Factor 4 interpretation (F4)

The rank for each statement for Factor 4 was compared against the rank of statements of Factor 1, 2, 3, and 5 and a crib sheet was created.

The crib sheet includes the items ranked (+5) in F4, items ranked higher in F4 than all other factors, items ranked lower in F4 compared to other factors, and factors that are ranked (-5) in F4. When comparing the items with ranks higher and lower than F4, the item was included in the crib sheet even when the score was tied with other factors. By using statements rank from table (4.5), and the Z score for F4, the idealised Q sort was created as in table (4.9).

Disagree					Uncertain					Agree
-5	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**
8	31	15	10	48	43	17	35	42	46	27
51	2	47	29	9	45	13	16	20	28	18
	5	21	49	30	3	39	24	36	37	
		34	1	41	6	11	33	53		
			32	19	7	22	12			
			50	52	44	25	14			
				4	23	26				
					40					
					38					

Table 4.9 Factor array for Factor 4

Crib sheet for Providers Factor 4

Items ranked +5 for factor 4

Health campaigns should target young people, because advice is more effective if it is learnt at an early age (18; +5)

Educating mothers about lifestyle choices is an important measure that can improve the health of other family members (27; +5)

Items ranked higher in factor 4 compared to other factors, with their corresponding scores

There is little or no coordination of health communication messages in Qatar amongst various government entities (6; 0)

Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (7; 0)

Health care communication in Qatar is based on dictating messages, not on community involvement (11; +1)

Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea (12; +2)

Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns (19; -1)

Promoting public health is a new idea for Qatar (22; +1)

Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise (24; +2)

Healthcare promotion messages alone are not effective in changing lifestyles behaviour of people, government intervention is also necessary, such as in regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices (37; +4)

The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one -off" events (42; +3)

Food labelling in Qatar should include nutrition facts, serving sizes and calorie count (46; +4)

Social media is the best medium for raising awareness of health issues in Qatar (53; +3)

Items ranked lower in factor 4 compared to other factors, with their corresponding scores

Qatar has no baseline upon which it can judge the success of its healthcare communication efforts (4; -1)

Healthcare communication in Qatar focuses on disease literacy and not health literacy (5; -4)

Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of health care issues better than individual organisations, each delivering their own messages (14; +2)

Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive (15;-3)

Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar (16; +2)

Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long term value of such investment (21; -3)

Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health (23; 0)

The quality and accuracy of health information given to the public must be regulated (26; +1)

The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful (29; -2)

Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30; -1)

The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar (31; -4)

Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health (32; -2)

There is no cross-government coordination in Qatar to encourage people to improve their lifestyles (34; -3)

Items ranked -5 for factor 4

No measures to improve health literacy have been implemented in Qatar (8; -5)

The "*Kulluna*" health communication campaign provided much useful information to the public (51; -5)

Other items of importance (with 0 or near 0 ranking)

Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar (1; -2)

People are easily influenced by the eating habits of their friends and colleagues (3; 0)

The general awareness of current health communication campaigns is very low in Qatar (9; -1)

The quality of health communication campaigns in Qatar is generally poor (10; -2)

Health communication campaigns should be targeted at mothers (13; +1)

Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17; +1)

Health literacy is not measured in Qatar so healthcare communication is a 'hit and miss' (25; +1)

The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population (33; +2)

Schools play an important role in raising awareness of healthy lifestyle habits (35; +2)

There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar (38; 0)

Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles (39; +1)

Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results (40; 0)

The government should impose a ban on fast food advertising in Qatar (41; -1)

Qatar is making good use of the country's sports facilities to encourage people to exercise regularly (43; 0)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour (44; 0)

Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles (45; 0)

The 'Step into Health' campaign that encouraged walking is an ongoing success (48; -1)

Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective (49; -2)

The '*Kulluna*' health communication campaign was very effective (50; -2)

The 'Your Health first' campaign is an example of positive collaboration between health institutions (52; -1)

4.1.3.5 Factor 5 interpretation (F5)

The rank for each statement for Factor 5 was compared against the rank of statements of Factor 1, 2, 3, and 4 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F5, items ranked higher in F5 than all other factors, items ranked lower in F5 compared to other factors, and factors ranked (-5) in F5. When comparing the items with ranks higher and lower than F5, the item was included in the crib sheet even when the score was tied with other factors. By using statements rank from Table 4.5, and the Z score for F5, the idealised Q sort was created as in Table 4.10.

Disagree					Uncertain					Agree
-5	-4	-3	-2	-1	0	1	2	3	4	5
22	17	51	43	45	9	15	26	16	27	32
47	48	8	31	11	18	20	46	33	39	38
	1	7	53	4	24	35	10	37	41	
		50	2	3	6	40	23	14		
			52	44	36	25	5			
			12	19	30	21	28			
				13	34	42				
					29					
					49					

Table 4.10 Factor array for Factor 5

Crib sheet for Providers Factor 5

Items ranked +5 for factor 5

Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health (32 +5)

There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar. (38; +5)

Items ranked higher in factor 5 compared to other factors, with their corresponding scores

Healthcare communication in Qatar focuses on disease literacy and not health literacy (5; +2)

There is little or no coordination of health communication messages in Qatar amongst various government entities (6; 0)

The quality of health communication campaigns in Qatar is generally poor (10; +2)

Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive (15; +1)

Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns (19; -1)

Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long term value of such investment (21; +1)

Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health (23; +2)

The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population (33; +3)

Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles (39; +4)

Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results (40; +1)

The government should impose a ban on fast food advertising in Qatar (41; +4)

Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective (49; 0)

Items ranked lower in factor 5 compared to other factors, with their corresponding scores

Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar (1; -4)

People are easily influenced by the eating habits of their friends and colleagues (3; -1)

Qatar has no baseline upon which it can judge the success of its healthcare communication efforts (4; -1)

No measures to improve health literacy have been implemented in Qatar (8; -3)

Health communication campaigns should be targeted at mothers (13; -2)

Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of health care issues better than individual organisations, each delivering their own messages (14; -1)

Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17; -4)

The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits (28; +2)

Schools play an important role in raising awareness of healthy lifestyle habits (35; +1)

It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age (36; 0)

Food labelling in Qatar should include nutrition facts, serving sizes and calorie count (46; +2)

The 'Step into Health' campaign that encouraged walking is an ongoing success (48; -4)

The 'Your Health first' campaign is an example of positive collaboration between health institutions (52; -2)

Items ranked -5 for factor 5

Promoting public health is a new idea for Qatar (22; -5)

The current 'Anti-smoking' campaigns are effective in raising public awareness (47; -5)

Other items of importance (with 0 or near 0 ranking)

The '*Kulluna*' health promotion campaign messages were clear and have affected consumer behaviour in a positive manner (2; -2)

The general awareness of current health communication campaigns is very low in Qatar (9; 0)

Health care communication in Qatar is based on dictating messages, not on community involvement (11; -1)

Health campaigns should target young people, because advice is more effective if it is learnt at an early age (18; 0)

Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate (20; +1)

Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise (24; 0)

Health literacy is not measured in Qatar so healthcare communication is a 'hit and miss'(25; +1)

The quality and accuracy of health information given to the public must be regulated (26; +2)

The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful (29; 0)

Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30; 0)

The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar (31; 0)

There is no cross-government coordination in Qatar to encourage people to improve their lifestyles (34; 0)

The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one -off" events (42; +1)

Qatar is making good use of the country's sports facilities to encourage people to exercise regularly (43; -2)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour (44; -1)

Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles (45; -1)

Social media is the best medium for raising awareness of health issues in Qatar (53; -2)

4.2 Healthcare consumers study

The healthcare consumers study link was sent to 54 subjects of which, a total of 52 subjects agreed to participate. The P set of 52 healthcare consumers completed the study, which comprised 57 statements, thereby maintaining the suggestion of ensuring that the number of participants in the study is less than the number of items (statements) in the Q set completing the study (Stenner & Watts, 2012: 73).

The subjects of the healthcare consumer group who participated were from the general public, of various nationalities and from both genders. They all had reasonable proficiency of the English language and more than two years of experience in their role in Qatar. Appendix (4) lists the completed Q sorts.

On average the Q sort took 20 to 40 minutes to complete, The 52 Q sorts were then imported to PQMethod from Q-Assessor.

4.2.1 Factor extraction

The correlation matrix of all Q sorts was first generated. The correlation matrix shows the relationship of each Q sport with every other Q sort—see appendix 15. The factor loading was calculated using the following formula:

$$\textbf{Factor Loading} = 2.58 \times (1/\sqrt{57}) = 0.34$$

Using Varimax rotation and PCA, the factors were rotated and 7, 6, 5 and 4 solutions were examined and compared.

Varimax rotation at 7 factors on a significant loading of **0.34** had a variance of 47% but had 18 Q sorts confounded and only 2 Q sorts were associated with factor 7.

On a 6 factor solution at the calculated significant loading of **0.34**, the variance was 42% and had 13 Q sorts confounded. When the significant

loading was raised to **0.40** in an attempt to reduce the confounded Q sorts, while only 6 Q sorts were confounded, factor 6 had only 3 Q sorts associated with it.

The Varimax rotation on 5 factors solution at a significant loading of **0.34** produced a variance of 38% and had 16 Q sorts confounded. However, when the significant loading was raised to **0.40**, only 8 Q sorts were confounded.

When the significant loading was further raised to **0.42** in an attempt to reduce the confounded Q sorts, only 6 Q sorts were confounded and when it was raised further to **0.45**, only 5 Q sorts were confounded. However, with this last solution, only 3 Q sorts were associated with factor 5. Therefore, the significant loading of **0.42** was selected as it satisfied the required criteria (Brown, 1980).

Further rotations on 4 factors produced a variance of 33%, which was below the level recommended (Watts & Stenner, 2012).

4.2.2 Factor solution

The five-factor solution with the raised significant loading to 0.42 and with a variance of 38% has produced more than four Q sorts, significantly loading with each of the factors; this solution has only 5 confounded Q sorts. See Table 4.11.

Factor Number	Q sorts	Total	Cumulative Total
F1	7202, 7199, 7243, 7204, 7308, 7306, 7323	7	7
F2	7203, 7197, 7248, 7303, 7304, 7308, 7260	7	14
F3	7212, 7311, 7245, 7338	4	18
F4	7210, 7211, 7242, 7290, 7320, 7319, 7327, 7342, 7326	9	27
F5	7196, 7268, 7271, 7328	4	31
Confounded	7246, 7252, 7216, 7279, 7208	5	36
Non-significant	7207, 7198, 7200, 7209, 7258, 7225, 7278, 7295, 7305, 7292, 7293, 7315, 7316, 7317, 7330, 7352	16	52

Table 4.11 Factor defining Q sorts table for the five extracted factors

Table 4.12 indicates the significantly loaded Q sorts on the extracted five factors. Table 4.13 shows the defining factors including those confounded. While the correlation between the five factors is presented in Table 4.14.

	Loadings				
QSORT	1	2	3	4	5
1 7202	0.4278X	-0.0283	0.1581	0.1105	0.2408
2 7203	0.0120	0.5770X	0.3568	0.0203	-0.0142
3 7196	0.0792	0.1297	0.1338	0.0895	0.4205X
4 7197	0.2558	0.4728X	0.1847	0.2506	0.3805
5 7207	0.2719	-0.0174	-0.1130	0.3459	0.3613
6 7212	-0.0428	-0.0083	0.5286X	0.1399	-0.0646
7 7198	0.1394	-0.0221	0.0498	0.0399	0.3971
8 7200	0.3518	0.1801	0.0384	0.0853	0.3562
9 7199	0.4841X	-0.0572	0.1599	0.1102	0.2932
10 7210	0.0976	-0.2659	-0.1075	0.4218X	0.2768
11 7211	0.1596	-0.2172	-0.0502	0.5690X	-0.4079
12 7209	0.2141	-0.3570	0.1810	0.3407	0.0916
13 7243	0.6251X	0.0592	0.0848	0.1869	-0.0175
14 7242	0.0765	-0.0074	-0.0221	0.4965X	0.3665

	Loadings				
QSORT	1	2	3	4	5
15 7204	0.5849X	0.2007	0.0295	-0.1013	-0.2422
16 7246	-0.1491	0.4521X	0.0351	-0.0222	0.4154X
17 7258	0.0608	0.3864	0.2355	0.2346	0.2824
18 7225	0.2735	0.0088	0.3433	0.3330	0.1247
19 7268	-0.0589	0.0163	0.1597	0.1256	0.4396X
20 7252	0.4493X	-0.1747	0.4899X	0.1224	0.0437
21 7271	0.0690	-0.0658	-0.1832	0.1169	0.5751X
22 7216	0.1568	0.5021X	0.5402X	-0.1362	0.1341
23 7278	0.4105	0.1132	-0.2086	-0.1925	-0.0423
24 7290	0.0740	0.0461	0.2214	0.4831X	0.1116
25 7248	0.2454	0.4901X	0.1577	0.1117	0.0477
26 7279	0.3766	0.4688X	0.2853	0.4463X	0.0173
27 7298	0.2926	0.3541	0.2217	0.2571	-0.0527
28 7311	0.1196	0.0995	0.5605X	0.0235	0.3221
29 7303	0.3903	0.4941X	0.1047	0.3965	0.1512
30 7305	0.1709	0.0135	-0.1347	-0.1368	0.3778
31 7292	0.3695	0.2610	0.1591	0.2654	0.1832
32 7293	-0.0421	0.0209	0.3461	0.2779	0.3071
33 7308	0.4266X	-0.2586	-0.0328	0.2957	-0.2383
34 7315	0.0698	0.4020	-0.1378	0.2609	0.3948
35 7316	-0.2406	0.2183	0.0703	0.0245	0.2902
36 7245	0.2285	0.0945	0.5693X	-0.0378	-0.1394
37 7304	0.2451	0.6618X	-0.0589	-0.0677	0.0843
38 7317	0.2938	0.1647	0.2503	0.0850	0.2707
39 7308	-0.1495	0.4863X	-0.1099	0.0647	0.1305
40 7320	-0.1629	0.2568	0.1972	0.4765X	0.1156
41 7306	0.4342X	-0.0054	0.1067	-0.1180	0.1959
42 7319	0.1341	0.1682	-0.1326	0.6357X	0.0646
43 7327	-0.2845	0.2968	0.1200	0.5155X	-0.1020

	Loadings				
QSORT	1	2	3	4	5
44 7260	0.1128	0.5112X	-0.3228	0.1512	-0.1482
45 7330	0.2629	0.2876	-0.3806	0.1791	0.3750
46 7208	0.5026X	0.1025	0.3328	0.1927	0.4492X
47 7328	0.0785	0.2201	0.1301	0.1809	0.5802X
48 7323	0.5070X	0.1503	-0.0882	0.1131	0.2870
49 7338	0.1012	0.3267	0.4463X	0.4148	0.2450
50 7342	0.0198	0.1715X	0.2034	0.5590X	0.2133
51 7326	0.3680	0.1624	-0.2348	0.4340X	0.2808
52 7352	0.3775	0.2216	0.1791	0.2612	0.1669
% expl.Var.	8	8	6	8	8
Eginvalue	4.32	4.27	3.30	4.21	4.02

Table 4.12 Consumer Factor matrix with an X indicating a defining sort

Factors	**1**	**2**	**3**	**4**	**5**
No. of defining variables	10	10	6	12	8
Average rel. coef.	0.800	0.800	0.800	0.800	0.800
Composite reliability	0.976	0.976	0.960	0.980	0.970
S.E. of Factor Z-Scores	0.156	0.156	0.200	0.143	0.174

Table 4.13 Factor characteristics

	1	2	3	4	5
1	1.0000	0.3513	0.4484	0.3204	0.3527
2	0.3513	1.0000	0.4502	0.4217	0.4475
3	0.4484	0.4502	1.0000	0.2816	0.3613
4	0.3204	0.4217	0.2816	1.0000	0.3679
5	0.3527	0.4475	0.3613	0.3679	1.0000

Table 4.14. Correlations between factor scores

4.2.3 Factor interpretation

Q analysis was performed in PQMethod and, once the five factors were extracted, the factor scores Z scores for each statement in each factor were calculated and given a rank. Factor arrays were configured from the Z scores tables produced by PQMethod (Appendices 16-20) along with the ranking of statements from Table 4.15.

No.	Statement	Factor Arrays				
		1	2	3	4	5
1	TV and social media are the best mediums for raising awareness issues in Qatar.	+3	-1	+1	+2	+3
2	I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years in Qatar.	+1	+1	0	0	-5
3	Communication between healthcare institutions and the community is weak in Qatar.	+2	+4	+1	0	+1
4	The poor quality of health promotion campaigns in Qatar indicates that the local health communication staff lack skills and knowledge in this field.	+2	+2	+1	0	-2
5	Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me.	-1	+1	+1	-3	-1
6	A humanitarian approach to healthcare campaigns that makes the community feel cared for would be effective in Qatar.	0	+3	+2	+4	+3
7	Information about health campaigns and events usually only appear in the local papers after they have taken place.	0	0	+4	+1	-4
8	I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me.	-5	-5	-4	-3	-4
9	There is very little communication of health-related events and activities in Qatar.	+3	+1	+2	-1	-2
10	Health communication professionals in Qatar are generally not effective at engaging with the community.	-2	+2	+3	0	+2
11	Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruits and vegetables.	-1	+3	0	0	+5
12	When I understand the value of a certain behaviour I am more motivated to adopt that behaviour.	+3	+4	+4	+2	+1

No.	Statement	Factor Arrays				
		1	2	3	4	5
13	Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten.	0	+2	+1	+4	+1
14	I feel that most healthcare campaigns are not targeted at me, so I just ignore them.	-4	-1	-4	+3	-1
15	Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate health benefit. Following diet and exercise does not show immediate results	-2	+2	-2	+2	+1
16	Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them.	+1	0	+3	+3	+2
17	Twitter is the best medium for communicating health-related information to the Qatari community.	0	-3	-1	0	-1
18	Most Qataris believe that support from hospital is all they need to safeguard their health.	-2	+1	0	+4	-1
19	The level of health literacy of Qatari women is very low.	+1	0	+1	+1	+1
20	In Qatar, people care more about the way they look than they do about their diet.	+3	-1	-1	+2	+3
21	Changing the lifestyles of older people is very difficult and it is a waste of time and effort.	-1	-5	-1	-5	+2
22	People in Qatar don't look after their health because they know they have access to free healthcare.	-1	-4	-3	-2	-2
23	Most smokers are aware of the health risks of smoking but they are not willing to change their behaviour.	+5	+1	+3	+3	-2
24	'I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving' this is the attitudes of most parents in Qatar.	-3	-1	-5	+1	-1
25	Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents.	+4	0	+4	+2	+3
26	The younger generation is learning bad habits from adults, such as smoking because it seems to be a widely accepted practice.	+4	0	+1	+1	+1
27	The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change.	-2	-3	-2	-1	0
28	The terms "The Qatar Pound" and "The Qatar Stone" are well known among expats in Qatar because of the widespread belief that the lifestyle here means that most people will eventually gain weight.	+4	0	-2	-2	-3
29	The culture in Qatar relates bad health and illness to fate.	0	-2	+2	-2	0

No.	Statement	Factor Arrays				
		1	2	3	4	5
30	Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways.	-2	+2	+2	+3	+3
31	"National Sports Day" is a one off Qatar's yearly events. It does not encourage me to change my habits and become more active, in fact. I look forward to have the day off.	-3	-2	-3	-1	0
32	Religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adobe healthy lifestyle habits.	-4	-4	-2	-3	-3
33	Sports facilities in Qatar are built to meet the requirement of men not women.	-1	-3	-2	-3	-4
34	The traditional Qatari cultural dress does not encourage people to walk.	-3	0	-1	-4	0
35	Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs.	+2	+2	0	-1	+1
36	The hot weather prevents me from integrating walking into my daily routine.	+3	+3	-5	+1	+2
37	Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity.	+2	+5	+5	-3	0
38	Traffic is an obstacle that prevents people from playing sports regularly.	0	-2	-3	0	0
39	Neighbourhoods need more public spaces to allow people to integrate light exercises as part of their daily routine.	0	+4	+3	+1	+4
40	Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting.	+2	-1	0	-1	0
41	Smoking *argela* and *shisha* has become very popular among women in Qatar.	+1	-2	+2	+2	+2
42	Anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of the Qatari culture.	+2	-4	-2	-4	-5
43	Non-smoking places are not respected or enforced in Qatar.	-5	+3	+3	+1	-3
44	Schools adherence to serving healthy foods in their canteens is superficial.	+1	-2	-1	+5	0
45	There is a clear lack of healthy food outlets in Qatar.	+1	-2	+1	-2	+4
46	Expensive gym subscriptions prevent people from exercising.	+1	+5	-1	-1	+5
47	Sports events are widely advertised in Qatar, but I am not interested in them.	-3	-3	+2	-5	-1

No.	Statement	Factor Arrays				
		1	2	3	4	5
48	Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value of adopting a more active and healthy lifestyle choices,	+5	+3	+5	+5	+4
49	There is too much conflicting information about which foods are health and unhealthy for people to make informed decision about what to eat.	-2	0	-3	-1	-1
50	People in Qatar are too busy to prepare healthy food to eat every day.	-3	-1	-4	-2	-3
51	The "*Kulluna*" health communication campaign did not provide much useful information.	0	-1	0	-1	-3
52	The "*Kulluna*" health communication campaign failed to make me change my behaviour.	+1	+1	0	0	-1
53	I am not aware of the "Anti-smoking" campaign that is currently taking place.	-1	+1	0	+3	-2
54	The "Think Pink" walk, "Wheels and Heels" and initiatives about breastfeeding are few campaigns that I recall but they did not influence my behaviour.	-1	0	-1	+1	0
55	I participated in the "Step into Health" campaign that encouraged walking, but once my pedometer stopped, so did I.	-4	-3	-3	-4	-2
56	The "Your Health First" campaign has created general awareness amongst health consumers in Qatar.	0	-1	-1	-2	-2
57	The "*Kulluna*" health communication campaign was too generalised to be effective.	-1	+1	0	0	+1

Table 4.15 Healthcare consumers factor Q sort values for each statement (statements ranking table)

4.2.3.1 Factor 1 interpretation (F1)

The rank for each statement for Factor 1 was compared against the rank of statements of Factor 2, 3, 4, and 5 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F1, items ranked higher in F1 than all other factors, items ranked lower in F1 compared to other factors, and factors ranked (-5) in F1. When comparing the items with ranks higher and lower than F1, the item was included in the crib sheet even when the score was tied with other factors.

The idealised Q sort for F1 is represented in Table 4.16.

Disagree					Uncertain					Agree
-5	-4	-3	-2	-1	0	1	2	3	4	5
43	14	34	27	11	29	46	37	12	25	48
8	32	50	10	5	6	41	35	1	26	23
	55	31	18	53	38	2	42	20	28	
		24	15	21	39	19	3	36		
		47	49	54	7	45	4	9		
			30	57	13	44	40			
				33	51	52				
				22	17	16				
					56					

Table 4.16 Healthcare consumers group: factor array for Factor 1

Crib sheet for Consumer Factor 1

Items ranked +5 for factor 1

Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle choices (48; +5)

Most smokers are aware of the health risks of smoking but they are not willing to change their habits (23; +5)

Items ranked higher in factor 1 compared to other factors, with their corresponding scores

TV and social media are the best mediums for raising awareness of health issues in Qatar (1; +3)

I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar (2; +1)

The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field (4; +2)

There is very little communication of health-related events and activities in Qatar (9; +3)

Twitter is the best medium for communicating health-related information to the Qatari community (17; 0)

The level of health literacy of Qatari women is very low (19; +1)

In Qatar, people care more about the way they look than they do about their diet (20; +3)

People in Qatar don't look after their health because they know they have access to free healthcare (22; -1)

Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents (25; +4)

The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice (26; +4)

The terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight (28; +4)

Sports facilities in Qatar are built to meet the requirements of men, not women (33; -1)

Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here (35; +2)

The hot weather prevents me from integrating walking into my daily routine (36; +3)

Traffic is an obstacle that prevents people from playing sports regularly (38; 0)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (40; +2)

Anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of Qatari culture (42; +2)

The '*Kulluna*' health communication campaign did not provide much useful information (51; 0)

The '*Kulluna*' health communication campaign failed to make me change my behaviour (52; +1)

The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar (56; 0)

Items ranked lower in factor 1 compared to other factors, with their corresponding scores

A humanitarian approach to healthcare campaigns that makes the community feel cared for would be effective in Qatar (6; 0)

Health communication professionals in Qatar are generally not effective at engaging with the community (10; -2)

Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten (13; 0)

I feel that most healthcare campaigns are not targeted at me, so I just ignore them (14; -4)

Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results (15; -2)

Most Qataris believe that support from hospital is all they need to safeguard their health (18;-2)

Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways (30; -2)

'National Sports Day' is a one of Qatar's yearly events. It does not encourage me to change my habits and became more active, in fact, I look forward to have the day off (31; -3)

Religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits (32; -4)

Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine (39; 0)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns I recall but they did not influence my behaviour (54; -1)

I participated in the 'Step into Health' campaign that encouraged walking, but once my pedometer stopped, so did I (55; -4)

The '*Kulluna*' health communication campaign was too generalised to be effective (57; -1)

Items ranked -5 for factor 1

Non-smoking places are not respected or enforced in Qatar (43; -5)

I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me (8; -5)

Other items of importance (with 0 or near 0 ranking)

Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me (5; -1)

Information about health campaigns and events usually only appear in the local papers after they have taken place (7; 0)

Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also

required, such as in regulating fast food advertising and subsidising fruit and vegetable prices (11; -1)

Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them (16; +1)

The culture in Qatar relates bad health and illness to fate (29; 0)

Smoking *argela* and *shisha* has become very popular among women in Qatar (41; +1)

Schools adherence to serving healthy foods in their canteens is superficial (44; +1)

There is a clear lack of healthy food outlets in Qatar (45; +1)

Expensive gym subscriptions prevent people from exercising (46; +1)

I am not aware of the 'Anti-smoking' campaign that is currently taking place in Doha (53; -1)

4.2.3.2 Factor 2 interpretation (F2)

The rank for each statement for Factor 2 was compared against the rank of statements of Factor 1, 3, 4, and 5 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F2, items ranked higher in F2 than all other factors, items ranked lower in F2 compared to other factors, and factors ranked (-5) in F2. When comparing the items with ranks higher and lower than F2, the item was included in the crib sheet even when the score was tied with other factors.

The idealised Q sort for F2 is represented in Table 4.17.

Disagree					Uncertain					Agree
-5	-4	-3	-2	-1	0	1	2	3	4	5
21	22	33	44	24	7	23	15	11	39	46
8	32	55	38	14	28	9	30	36	12	37
	42	27	41	40	49	2	4	48	3	
		47	31	50	19	57	10	43		
		17	45	51	26	5	35	6		
			29	1	54	53	13			
				20	16	52				
				56	34	18				
					25					

Table 4.17 Healthcare consumers group: factor array for Factor 2

Crib sheet for Consumer Factor 2

Items ranked +5 for factor 2

Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity (37; +5)

Expensive gym subscriptions prevent people from exercising (46; +5)

Items ranked higher in factor 2 compared to other factors, with their corresponding scores

I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar (2; +1)

Communication between healthcare institutions and the community is weak in Qatar (3; +4)

The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field (4; +2)

Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me (5; +1)

When I understand the value of a certain behaviour I am more motivated to adopt that behaviour (12; +4)

Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results (15; +2)

The traditional Qatari cultural dress does not encourage people to walk (34; 0)

Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here (35; +2)

The hot weather prevents me from integrating walking into my daily routine (36; +3)

Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine (39; +4)

Non-smoking places are not respected or enforced in Qatar (43; +3)

There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decision about what to eat (49; 0)

People in Qatar are too busy to prepare healthy food to eat every day (50; -1)

The '*Kulluna*' health communication campaign failed to make me change my behaviour (52; +1)

The '*Kulluna*' health communication campaign was too generalised to be effective (57; +1)

Items ranked lower in factor 2 compared to other factors, with their corresponding scores

TV and social media are the best mediums for raising awareness of health issues in Qatar (1; -1)

Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruit and vegetable prices (11; -3)

Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them (16; 0)

Twitter is the best medium for communicating health-related information to the Qatari community (17; -3)

The level of health literacy of Qatari women is very low (19; 0)

In Qatar, people care more about the way they look than they do about their diet (20; -1)

People in Qatar don't look after their health because they know they have access to free healthcare (22; -4)

Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents (25; 0)

The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice (26; 0)

The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change (27; -3)

The culture in Qatar relates bad health and illness to fate (29; -2)

Religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits (32; -4)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (40; -1)

Smoking *argela* and *shisha* has become very popular among women in Qatar (41; -2)

Schools adherence to serving healthy foods in their canteens is superficial (44; -2)

There is a clear lack of healthy food outlets in Qatar (45; -2)

Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle choices (48; +3)

Items ranked -5 for factor 2

I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me (8; -5)

Changing the lifestyles of older people is very difficult and is a waste of time and money (21; -5)

Other items of importance (with 0 or near 0 ranking)

Information about health campaigns and events usually only appear in the local papers after they have taken place (7; 0)

There is very little communication of health-related events and activities in Qatar (9; +1)

I feel that most healthcare campaigns are not targeted at me, so I just ignore them (14; -1)

Most Qataris believe that support from hospital is all they need to safeguard their health (18; +1)

Most smokers are aware of the health risks of smoking but they are not willing to change their habits (23; +1)

"I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving" This is the attitude of most parents in Qatar (24; -1)

The terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight (28; 0)

The '*Kulluna*' health communication campaign did not provide much useful information (51; -1)

I am not aware of the 'Anti-smoking' campaign that is currently taking place in Doha (53; +1)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns I recall but they did not influence my behaviour (54; 0)

The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar (56; -1)

4.2.3.3 Factor 3 interpretation (F3)

The rank for each statement for Factor 3 was compared against the rank of statements of Factor 1, 2, 4, and 5 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F3, items ranked higher in F3 than all other factors, items ranked lower in F3 compared to other factors, and factors ranked (-5) in F3. When comparing the items with ranks higher and lower than F3, the item was included in the crib sheet even when the score was tied with other factors. The idealised Q sort for F3 is represented in Table 4.18.

Disagree					Uncertain					Agree
-5	-4	-3	-2	-1	0	1	2	3	4	5
36	8	31	33	46	52	13	9	23	12	5
24	14	38	28	17	53	1	41	16	25	48
	50	55	27	56	11	45	30	43	7	37
		49	32	20	2	5	47	10		
		22	42	21	40	3	29	39		
			15	44	57	4	6			
				34	51	26				
				54	35	19				
					18					

Table 4.18 Healthcare consumers group: factor array for Factor 3

Crib sheet for Consumer Factor 3

Items ranked +5 for factor 3

Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity (37; +5)

Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle choices (48; +5)

Items ranked higher in factor 3 compared to other factors, with their corresponding scores

Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me (5; +1)

Information about health campaigns and events usually only appear in the local papers after they have taken place (7; +4)

Health communication professionals in Qatar are generally not effective at engaging with the community (10; +3)

When I understand the value of a certain behaviour I am more motivated to adopt that behaviour (12; +4)

Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them (16; +3)

The level of health literacy of Qatari women is very low (19; +1)

Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents (25; +4)

The culture in Qatar relates bad health and illness to fate (29; +2)

Religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits (32; -2)

Smoking *argela* and *shisha* has become very popular among women in Qatar (41; +2)

Non-smoking places are not respected or enforced in Qatar (43; +3)

Sports events are widely advertised in Qatar, but I am not interested in them (47; +2)

The '*Kulluna* health communication campaign did not provide much useful information (51; 0)

Items ranked lower in factor 3 compared to other factors, with their corresponding scores

I feel that most healthcare campaigns are not targeted at me, so I just ignore them (14; -4)

Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results (15; -2)

In Qatar, people care more about the way they look than they do about their diet (20; -1)

'National Sports Day' is a one of Qatar's yearly events. It does not encourage me to change my habits and became more active, in fact, I look forward to have the day off (31; -3)

Traffic is an obstacle that prevents people from playing sports regularly (38; -3)

Expensive gym subscriptions prevent people from exercising (46; -1)

There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decision about what to eat (49; -3)

People in Qatar are too busy to prepare healthy food to eat every day (50; -4)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns I recall but they did not influence my behaviour (54; -1)

Items ranked -5 for factor 3

"I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving" This is the attitude of most parents in Qatar (24; -5)

The hot weather prevents me from integrating walking into my daily routine (36; -5)

Other items of importance (with 0 or near 0 ranking)

TV and social media are the best mediums for raising awareness of health issues in Qatar (1; +1)

I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar (2; 0)

Communication between healthcare institutions and the community is weak in Qatar (3; +1)

The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field (4; +1)

Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruit and vegetable prices (11; 0)

Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten (13; +1)

Twitter is the best medium for communicating health-related information to the Qatari community (17; -1)

Most Qataris believe that support from hospital is all they need to safeguard their health (18; 0)

Changing the lifestyles of older people is very difficult and is a waste of time and money (21; -1)

The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice (26; +1)

The traditional Qatari cultural dress does not encourage people to walk (34; -1)

Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here (35; 0)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (40; 0)

Schools adherence to serving healthy foods in their canteens is superficial (44; -1)

There is a clear lack of healthy food outlets in Qatar (45; +1)

The '*Kulluna*' health communication campaign failed to make me change my behaviour (52; 0)

I am not aware of the 'Anti-smoking' campaign that is currently taking place in Doha (53; 0)

The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar (56; -1)

The '*Kulluna*' health communication campaign was too generalised to be effective (57; 0)

4.2.3.4 Factor 4 interpretation (F4)

The rank for each statement for Factor 4 was compared against the rank of statements of Factor 1, 2, 3, and 5 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F4, items ranked higher in F4 than all other factors, items ranked lower in F4 compared to other factors, and factors ranked (-5) in F4. When comparing the items with ranks higher and lower than F4, the item was included in the crib sheet even when the score was tied with other factors. The idealised Q sort for F4 is represented in Table 4.19.

Disagree					Uncertain					Agree
-5	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**
21	34	33	45	46	3	36	12	16	13	48
47	55	8	28	9	10	24	20	53	18	44
	42	5	56	27	38	39	41	23	6	
		37	50	51	17	43	15	14		
		32	22	49	52	26	1	30		
			29	35	57	54	25			
				40	4	7				
				31	11	19				
					2					

Table 4.19 Healthcare consumers group: factor array for Factor 4

Crib sheet for Consumer Factor 4

Items ranked +5 for factor 4

Schools adherence to serving healthy foods in their canteens is superficial (44; +5)

Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle choices (48; +5)

Items ranked higher in factor 4 compared to other factors, with their corresponding scores

A humanitarian approach to healthcare campaigns that makes the community feel cared for would be effective in Qatar (6; +4)

I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me (8; -3)

Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten (13; +4)

I feel that most healthcare campaigns are not targeted at me, so I just ignore them (14; +3)

Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results (15; +2)

Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them (16; +3)

Twitter is the best medium for communicating health-related information to the Qatari community (17; 0)

Most Qataris believe that support from hospital is all they need to safeguard their health (18; +4)

The level of health literacy of Qatari women is very low (19; +1)

"I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving" This is the attitude of most parents in Qatar (24; +1)

Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways (30; +3)

Traffic is an obstacle that prevents people from playing sports regularly (38; 0)

Smoking *argela* and *shisha* has become very popular among women in Qatar (41; +2)

I am not aware of the 'Anti-smoking' campaign that is currently taking place in Doha (53; +3)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns I recall but they did not influence my behaviour (54; +1)

Items ranked lower in factor 4 compared to other factors, with their corresponding scores

Communication between healthcare institutions and the community is weak in Qatar (3; 0)

Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me (5; -3)

The traditional Qatari cultural dress does not encourage people to walk (34; -4)

Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here (35; -1)

Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity (37; -3)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (40; -1)

There is a clear lack of healthy food outlets in Qatar (45; -2)

Expensive gym subscriptions prevent people from exercising (46; -1)

The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar (56; -2)

Items ranked -5 for factor 4

Changing the lifestyles of older people is very difficult and is a waste of time and money (21; -5)

Sports events are widely advertised in Qatar, but I am not interested in them (47; -5)

Other items of importance (with 0 or near 0 ranking)

I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar (2; 0)

The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field (4; 0)

Information about health campaigns and events usually only appear in the local papers after they have taken place (7; +1)

There is very little communication of health-related events and activities in Qatar (9; -1)

Health communication professionals in Qatar are generally not effective at engaging with the community (10; 0)

Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruit and vegetable prices (11; 0)

The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice (26; +1)

The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change (27; -1)

'National Sports Day' is a one of Qatar's yearly events. It does not encourage me to change my habits and became more active, in fact, I look forward to have the day off (31; -1)

The hot weather prevents me from integrating walking into my daily routine (36; +1)

Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine (39; +1)

Non-smoking places are not respected or enforced in Qatar (43; +1)

There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decision about what to eat (49; -1)

The '*Kulluna*' health communication campaign did not provide much useful information (51; -1)

The '*Kulluna*' health communication campaign failed to make me change my behaviour (52; 0)

The '*Kulluna*' health communication campaign was too generalised to be effective (57; 0)

4.2.3.5 Factor 5 interpretation (F5)

The rank for each statement for Factor 5 was compared against the rank of statements of Factor 1, 2, 3, and 4 and a crib sheet was created. The crib sheet includes the items ranked (+5) in F5, items ranked higher in F5 than all other factors, items ranked lower in F5 compared to other factors, and factors ranked (-5) in F5. When comparing the items with ranks higher and lower than F5, the item was included in the crib sheet even when the score was tied with other factors. The idealised Q sort for F5 is represented in Table 4.20.

Disagree					Uncertain					Agree
-5	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**
42	8	50	9	5	34	19	41	1	39	11
2	7	43	56	47	31	15	23	20	45	46
	33	32	53	52	40	26	36	30	48	
		51	55	24	27	35	16	25		
		28	4	14	29	3	21	6		
			22	49	44	12	10			
				17	54	57				
				18	38	13				
					37					

Table 4.20 Healthcare consumers group: factor array for Factor 5

Crib sheet for Consumer Factor 5

Items ranked +5 for factor 5

Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruit and vegetable prices (11; +5)

Expensive gym subscriptions prevent people from exercising (46; +5)

Items ranked higher in factor 5 compared to other factors, with their corresponding scores

TV and social media are the best mediums for raising awareness of health issues in Qatar (1; +3)

The level of health literacy of Qatari women is very low (19; +1)

In Qatar, people care more about the way they look than they do about their diet (20; +3)

Changing the lifestyles of older people is very difficult and is a waste of time and money (21; +2)

The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change (27; 0)

Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways (30; +3)

'National Sports Day' is a one of Qatar's yearly events. It does not encourage me to change my habits and became more active, in fact, I look forward to have the day off (31; 0)

The traditional Qatari cultural dress does not encourage people to walk (34; 0)

Traffic is an obstacle that prevents people from playing sports regularly (38; 0)

Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine (39; +4)

Smoking *argela* and *shisha* has become very popular among women in Qatar (41; +2)

There is a clear lack of healthy food outlets in Qatar (45; +4)

I participated in the 'Step into Health' campaign that encouraged walking, but once my pedometer stopped, so did I (55; -2)

The '*Kulluna*' health communication campaign was too generalised to be effective (57; +1)

Items ranked lower in factor 5 compared to other factors, with their corresponding scores

The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field (4; -2)

Information about health campaigns and events usually only appear in the local papers after they have taken place (7; -4)

There is very little communication of health-related events and activities in Qatar (9; -2)

When I understand the value of a certain behaviour I am more motivated to adopt that behaviour (12; +1)

Most smokers are aware of the health risks of smoking but they are not willing to change their habits (23; -2)

The terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight (28; -3)

Sports facilities in Qatar are built to meet the requirements of men, not women (33; -4)

The '*Kulluna*' health communication campaign did not provide much useful information (51; -3)

The '*Kulluna*' health communication campaign failed to make me change my behaviour (52; -1)

I am not aware of the 'Anti-smoking' campaign that is currently taking place in Doha (53; -2)

The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar (56; -2)

Items ranked -5 for factor 5

I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar (2; -5)

Anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of Qatari culture (42; -5)

Other items of importance (with 0 or near 0 ranking)

Communication between healthcare institutions and the community is weak in Qatar (3; +1)

Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me (5; -1)

Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten (13; +1)

I feel that most healthcare campaigns are not targeted at me, so I just ignore them (14; -1)

Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results (15; +1)

Twitter is the best medium for communicating health-related information to the Qatari community (17; -1)

Most Qataris believe that support from hospital is all they need to safeguard their health (18; -1)

"I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving" This is the attitude of most parents in Qatar (24; -1)

The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice (26; +1)

The culture in Qatar relates bad health and illness to fate (29; 0)

Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here (35; +1)

Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity (37; 0)

Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting (40; 0)

Schools adherence to serving healthy foods in their canteens is superficial (44; 0)

Sports events are widely advertised in Qatar, but I am not interested in them (47; -1)

There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decision about what to eat (49; -1)

The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns I recall but they did not influence my behaviour (54; 0)

4.3 Presentation of results

The analysis of the data collected from the healthcare providers group and the healthcare consumers group resulted in a total of 10 factors.

These factors are presented here in two categories: Healthcare Providers and Healthcare Consumers. These two categories are divided into three further subcategories based on the attitudes of the respondents in each factor towards health literacy and public health campaigns in Qatar: broadly positive attitudes; broadly negative attitudes; and broadly neutral attitudes.

The categories are therefore presented in Tables 4.21 and 4.22.

Attitudes	Description of attitude
Broadly Positive Attitudes	
Factor 1	A cautious but positive impression of health literacy levels and views on public health campaigns – "We are doing well"
Broadly Negative Attitudes	
Factor 2	Uncoordinated, poorly targeted and too focused on disease literacy – "must do better"
Factor 5	For an interventionist approach – "authority intervention is key"
Broadly Neutral Attitudes	
Factor 3	Coordination is the key - "let's coordinate in order to do better"
Factor 4	The insider's view – "Community involvement is key"

Table 4.21 Healthcare providers group

Attitudes	Description of attitude
Broadly Positive Attitudes	
N/A	There are no broadly positive Factors in the Healthcare Consumers Group.
Broadly Negative Attitudes	
Factor 1	Personal responsibility and government intervention more effective than mere persuasion
Factor 2	Weak campaigns, not Qatari culture, to blame for poor results
Factor 3	Personal responsibility more important than environmental factors or campaigns
Factor 4	Poor targeting, timing and follow-through limit campaign effectiveness
Broadly Neutral Attitudes	
Factor 5	Campaigns can work but often "do not cross my radar"

Table 4.22 Healthcare consumers group

4.3.1 Healthcare providers study

4.3.1.1 Broadly positive attitudes

Factor 1: A positive impression of health literacy levels and a cautious view of public health campaigns – "We are doing well"

> Factor 1 has an eigenvalue of 4.05 and explains 8% of the study variance. There are six participants who are significantly associated with this factor. All participants are male, have worked in the public sector for more than four years, hold senior managerial positions in the healthcare sector. Amongst the participants are two Qatari national and the other four of mixed Western and Arabic nationalities. Q sorts comprising this factor are 7195; 7244; 7251; 7267; 7272; and 7346.

The healthcare providers believe that Qatar is actively raising awareness of healthy lifestyles through a variety of programs and activities that target different population groups (1: +2). The notion that there is a lack of coordination of health communication messages among various government entities is dismissed, as is the notion that there is no cross-government coordination to encourage members of the public to improve their lifestyle (34: -3). This group believes that coordination efforts do exist among various local entities, such as schools and other educational institutions, which, if nurtured further, will help build a true and realistic picture of the current health literacy levels among various groups in the local community. This type of collaboration is greatly needed to help build a repository of knowledge about the level of health awareness and health literacy that exists within the diversified communities that reside in Qatar (16: +5).

The group disagree that health literacy measures have not been implemented (8: -5) and that health communication efforts are a 'hit and miss" (25: -1). They disagree that lifestyle-based health campaigns are not supported by policy makers because they do not deliver quick, visible results (40:-3). Furthermore, these respondents agree that the significant investment

in health services and health research in recent years has not neglected research into the reasons why many people lead unhealthy lifestyles (45:-2). These healthcare providers work in an environment where they are exposed to many public health campaigns and they reject the claim that there is an obvious lack of expertise in the field of healthcare communication. In rejecting the existence of such a skills deficit, the healthcare providers also reject the proposition that health promotion and health education campaigns are not effective (47:-4).

The impression of the healthcare promotion campaigns undertaken to date is generally very positive. Those in positions of financial authority understand the long-term value of investment in healthcare promotion and they defer to the expertise and knowledge of communications specialists when deciding to fund public health campaigns (20:-1).

In keeping with the generally positive view about healthcare promotion campaigns, the healthcare providers hold the view that campaigns generally last long enough to impact behaviour (23:+1).

They strongly believe that partnerships through corporate social responsibility programs are helping to coordinate messages and to raise awareness of healthcare issues better than individual organisations, each delivering their own messages (14:+5). They strongly disagree that promoting public health is a new idea (22:-5).

Cautious low ranking was given to the current and previous public health campaigns. Healthcare providers referred to the anti-smoking campaigns, which they viewed to be ineffective in raising public awareness of the dangers of smoking (47:-1). They also referenced the '*Kulluna*' health communication campaign (50:0), (51: 0). The 'Your Health First' campaign was rated quite low as well (52: -1). The messages conveyed by these campaigns were not felt to be very clear or to have affected consumer

behaviours in a positive way (2:-1). However, the 'Step into Health' campaign that encouraged the public to integrate walking into their daily routine was viewed as successful in changing behaviour (48:+1).

They dismiss the claim that the quality of healthcare communication given to the public is poor (10:-4). However, they stressed that the quality and accuracy of health information given to the public needs to be regulated and coordinated (26:+4).

They disagree that there is no yearly pre-approved budget for healthcare promotion that supports the work of communication professionals to design effective public promotion campaigns (19:-2). They agree that the authorities should devote a larger budget to improve health literacy and to promote healthy lifestyles amongst various communities (30:+2). The healthcare providers suggested that this could be done by organising events that encourage healthy behaviours on a regular and on-going basis and not just as 'one-off' events (42:+3).

They disagree with the view that the general awareness of health communication campaigns is very low in Qatar (9:-3). They also disagree with the suggestion that healthcare communication is based on dictating messages and is therefore removed from any community involvement (11:-3).

The idea of attempting to exploit the strong family bonds that exist in Qatari culture to encourage people to adopt healthier lifestyles was accepted by this group, (28:+2), as were campaigns that target *majlis* , where Qatari people typically meet and socialise (24: +1).

They agree that food labelling should include nutrition facts, serving sizes and calorie count (46: +4), and also agree rather strongly, with the proposition that health communication campaigns should be specifically targeting mothers (13: +3).

4.3.1.2 Broadly negative attitudes

Factor 2: Uncoordinated, poorly targeted and too focused on disease literacy — "must do better"

Factor 2 has an eigenvalue of 4.48 and variance of 9%. There are six Q sorts that define this factor. All participants are professional in their fields within the healthcare system. Amongst these participants, one is a healthcare communication professional. They are of mixed nationalities and there are no Qatari nationals amongst this group. Q sorts comprising this factor are 7217; 7233; 7226; 7282; 7276; and 7343.

This group strongly dismisses the notion that Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target different community groups (1:-4). They believe that promoting public health is a new idea for Qatar (22:+1) and that because health literacy is not really measured, healthcare communication is characterised by an unsystematic 'hit and miss' approach (25:+2).

They agree that there is no baseline against which the success of Qatar's healthcare communication efforts can be judged (4:+1). But they disagree with the notion that there no actions to improve health literacy have been implemented (8:-2).

They also agree that the general awareness of current health communication campaigns is very low (9:+2). This could be a result of lack of coordination of health communication messages among the various government entities (6:0).

They do not believe that the 'Think Pink' walk, the 'Wheels and Heels' campaign, or the initiatives about breastfeeding managed to influence consumer behaviour (44:-2). Similarly, the public health initiatives like '*Kulluna*' health communication campaign (50:-4), and the 'Your Health First' campaign were neither effective nor representative of good examples of

positive collaboration between health institutions (52:-2). In fact, they strongly believe that the '*Kulluna*' health promotion campaign messages were not only unclear but also rather confusing and have therefore not affected consumer behaviour in a positive manner (2:-5). They also believe that there is very little planning given to health promotion campaigns, and that campaigns are always reactive, not proactive (15:-1).

They also agree that there is no cross-government coordination to encourage people to improve their lifestyles (34:+1) and that the quality and accuracy of health information given to the public needs to be regulated (26:+4).

This group believe that there is an obvious lack of expertise in the health communication field and this has contributed to a lack of effectiveness in health promotion and health education campaigns (49:-1). This perceived lack of expertise is felt by the participants to be a great contributor the poor quality of health communication campaigns in Qatar (10:+1). Respondents believe that in order for health communication campaigns to be effective, they need to be specific and well-targeted; for example, by targeting individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17:+2). The respondents were neutral of the opinion that campaigns that are targeted at mothers will be more effective (13:0), but agree, that educating mothers about lifestyle choices is an important measure that can improve the health of other family members (27:+1).

There is a strong belief that schools play an important role in raising awareness of healthy lifestyle habits (35:+5) and that the focus should be on building a culture of sport to encourage healthy lifestyle habits among children at an early age (36:+4). The group strongly believes that the country is not making full use of its many sports facilities and that more needs to be

done to encourage the public, particularly children, to exercise regularly (43:-5). This group also believes that food labelling should include proper dietary facts (46: +2).

The participants advocate the utilization of the strong family bonds that exist in Qatari culture to encourage people to adopt healthier lifestyle habits (28:+5). However, they were skeptical that health campaigns that target *majlis* would be effective because this is a place where people meet and socialise (24:0).

The members of the group dismiss the notion that there is a pre-approved yearly budget for healthcare promotion that can be used to design effective promotion campaigns (19:-2), but they also believe that there should be a larger budget allocated to research investigating the infrastructure of the community to enable better design of public health promotional campaigns, improve health literacy levels and to promote healthier lifestyles (30:+2). The group feels that very little research is being done to discover the reasons why many people have unhealthy lifestyles (45:0).

They agree that the highest health authority in Qatar has the responsibility and ability to improve health awareness among the population (33:+3). However, they disagree with the notion that the health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun in order to encourage people to participate (20:-3). They tend to agree with the notion that health promotion campaigns in Qatar do not last long enough to make lasting improvements on people's health (23:0).

The group was skeptical of the idea that social media is the best vehicle through which to raise awareness of health issues in Qatar (53:-4). Rather, they agreed with the assertion that people are easily influenced by their friends' and colleagues' eating habits (3:+1).

They were indifferent to the clarity of the division of responsibilities between health entities in relation to public health promotion and public health education (31:0) and they disagree that lifestyle-based health campaigns are not supported by policy makers because they do not deliver quick, visible results (40:-1).

They showed a neutral position to the notion that approval for health promotion campaigns are not decided by healthcare communication professionals, but by people who have financial approval authority and who may not understand the long-term value of such investment (21:0). They showed a similarly neutral opinion regarding the notion that Qatar is focusing more on building infrastructure to fight disease than building infrastructure to promote good health (32:0).

Participants do not support the notion that healthcare communication focuses on disease literacy rather than health literacy (5:-1). Also, they do not believe that healthcare communication is based on dictating messages rather than community involvement (11:-1). Similarly, they also disagree that the local health entities have more interest in impressing the public with "fancy" new hospitals than in encouraging people to adopt health lifestyle behaviours (39:-1).

Factor 5: For an interventionist approach – "authority intervention is a key"

Factor 5 has an eigenvalue of 3.47 and explains 7% of the study variance. There are seven participants significantly associated with this factor. All participants work in public hospitals within Hamad Medical Corporation. Amongst this group are two communication specialists and two senior hospital administrators. Q sorts comprising this factor are 7227; 7189; 7265; 7283; 7275; 7344; and 7284.

The group supports the notion that there should be one overall healthcare committee empowered to coordinate and drive the efforts of all public health promotional initiatives (38:+5).

They strongly agree that the government should impose a ban on fast food advertising (41:+4) and that food labelling should be informative and include nutrition facts, serving sizes and calorie counts (46:+2) to encourage people to make better choices.

The participants agree with the assertion that lifestyle-based health campaigns are generally not supported by policy makers because they are perceived to be unable to deliver quick, visible results (40:+1).

The participants strongly disagree that Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups (1:-4). They show very strong agreement with the assertion that the country is focusing on building infrastructure to fight diseases rather than building infrastructure to promote good health (32:+5). The group agrees with the proposition that local health entities have more interest in impressing the public with "fancy" new hospitals than in encouraging people to change their lifestyles (39:+4).

The group disagrees that the division of responsibilities with regards to public health promotion and public health education among the various health entities is not clear (31:-2).

This group is indifferent to the notion that there is not much cross-government coordination to encourage people to improve their lifestyles (34:0). The group disagrees with the proposition that, despite the investment in health services, very little research is being done to understand why many people lead unhealthy lifestyles (45:-1).

They were indifferent to the notion that there is little or no coordination of health communication messages among various government entities (6:0) and agree that the quality of health communication campaigns is generally poor (10:+2). They believe that very little planning goes into health promotion campaigns and that campaigns are always reactive not proactive (15:+1).

The participants strongly disagree that promoting public health is a new idea for Qatar (22:-5) and they also disagree with the assertion that no measures to improve health literacy have been implemented in the country (8:-3).

They agree that approvals for health promotion campaigns are not decided by healthcare communication professionals, but are instead decided by people in positions of authority with the ability to make financial decisions but who might not understand the long-term value of such investment (21:+1). The group expresses an indifferent view on the assertion that Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30:0). They are also indifferent to the notion that health promotion and health education campaigns are not effective as a result of the lack in expertise in the health communication field (49:0). However, they agree that health promotion campaigns do not last long enough to make lasting improvements on people's health (23:+2).

The participants believe many campaigns were unsuccessful, such as the 'Step into Health' campaign that encouraged walking (48:-4), the 'Your Health First' campaign (52:-2), the 'Think Pink' walk, the "Wheels and Heels' campaign and initiatives on breastfeeding - all of which they believe did not manage to influence consumer behaviour (44:-1). The group strongly disagrees that the current anti-smoking campaigns are effective at raising public awareness (47:-5).

They dismiss the notion that corporate social responsibility programs can help to coordinate messages and raise awareness of health care issues better than individual organisations each delivering their own messages (14:-1). They believe that a pre-approved yearly budget for healthcare promotion is in place (19: -1).

The participants dismiss the notion that health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17:-4). The group also rejects the idea that campaigns should be specifically targeted at mothers to be effective (13:-2). However, this group agrees that creatively utilising the strong family bonds that exists in Qatari culture could encourage people to adopt healthier lifestyle habits (28:+2). The group is indifferent to the notion that it is important to build a culture of sport to encourage healthy lifestyle habits among children at an early age (36:0).

The group believes that the highest health authority in the country has the responsibility and ability to improve health awareness among the population (33:+3).

4.3.1.3 Broadly neutral attitudes

Factor 3: Coordination is a key, "let's coordinate to do better"

Factor 3 has an eigenvalue of 4.79 and explains 10% of the study variance. There are seven participants significantly associated with this factor. Participants of this group work in both public and private healthcare sectors. This group includes an employee from Qatar Cancer Society, three Qatari nationals and three in the medical field. Sorts comprising this factor are 7215; 7247; 7241; 7250; 7194; 7281; and 7294.

The participants of this group agree that the distribution of responsibilities for public health promotion and public health education among the various health entities is not clearly outlined in Qatar (31:+1). The group feels that

different sectors (government ministries, schools, hospitals, etc.) should work together to build a repository of knowledge on health awareness and determine the health literacy levels of the various communities in Qatar (16:+5).

They agree with the assertion that despite the investment in health services, very little research is being carried out to identify why many people have unhealthy lifestyles (45:+3). They disagree with the notion that healthcare entities have no pre-approved annual budget for healthcare promotion and that this may prevent healthcare communication professionals from researching and designing effective promotion campaigns (19:-1). However, they believe that Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles (30:+2).

The group rejects the notion that the highest health authority has the responsibility and ability to improve health awareness among the population (33:-1). However, they agree with the assertion that the quality and accuracy of health information communicated to the public needs to be regulated (26:+1).

They do not believe there is strong cross-government coordination to encourage people to improve their lifestyles (34:-3). They disagree that Qatar should have a single healthcare committee empowered to coordinate and drive the efforts of all public health promotion initiatives in Qatar (38:-2).

The participants feel that Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in the country (1:+1) and reject the assertion that lifestyle-based health campaigns are not supported by policy makers due to the perception that they do not deliver quick, visible results (40:-1).

The group supports the idea of creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise (12:+2). The group also supports the idea that those advocating the adoption of healthy lifestyles, such as campaign managers and senior figures working within the various health authorities, ought to lead by example, and that they need to show this to be fun in order to encourage more people to participate (20:+4). They agree that authorities should organise events that encourage healthy lifestyles on a regular, on-going basis and not just as "one -off" events (42:+3).

They strongly dismiss the suggestion that healthcare communication focuses on disease literacy and not health literacy (5:-4). They also reject the notion that there is little or no coordination of health communication messages among the various government entities (6:-2). Similarly, the participants strongly dismiss the suggestion that no measures to improve health literacy have been implemented in the country (8:-5). The group did not think it is a good idea for the government to impose a ban on fast food advertising (41:-5).

They showed indifference to the notion that health promotion campaigns do not last long enough to make lasting improvements to people's health (23:0).

The group also dismissed the idea that, because of the theory that people learn more effectively at a young age, health communication campaigns should be targeted disproportionately towards young people (18:-1). Conversely, they believe that health communication should target the entire population and not focus on one selected group. They also reject the notion that health communication campaigns should target a particular location or time to try to maximise impact; as such, the participants do not believe that health campaigns would be effective if they targeted *majlis* simply because it

is known as a place where people meet and socialise (24:-4). However, they do strongly believe that educating mothers about lifestyle choices is an important measure that can improve the health of other family members (27:+5).

There is a general indifference amongst the group that health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits (17:0). However, they disagree with the notion that health communication campaigns should target mothers because of their supposed ability to influence the entire family (13:-1).

The group remain neutral in their view that health literacy is not measured and that healthcare communication is consequently a 'hit and miss' (25:0). They also expressed an indifferent attitude towards campaigns such as the '*Kulluna*' health promotion campaign, (2:0) and were unsure that this campaign was successful in providing a great deal of useful information to the public (52:0). This group rated campaigns like the 'Think Pink' walk and the 'Wheels and Heels' as weakly positive campaigns that have managed to influence behaviour (44:+1).

The group felt it is necessary for food labelling to include nutrition facts, serving sizes and calorie count (46:+2). The group also believes that people are generally easily influenced by the eating habits of their friends and colleagues (3:+2).

The participants believe that Qatar is making good use of the country's sports facilities to encourage people to exercise regularly (43:+1), and also believe strongly that the key to encouraging people to adopt healthier lifestyles is to build a culture of sport and to promote healthy lifestyle habits among children at an early age (36:+4).

Factor 4: The insider's view — "Community involvement is a key"

Factor 4 has an eigenvalue of 4.23 and explains 9% of the study variance. There are seven participants who are significantly associated with this factor. Five participants work in the communication field. Amongst the participants of this group is one Qatari national. Two work in the Ministry of Health. Q sorts comprising this factor are 7193; 7206; 7269; 7301; 7228; 7312; and 7345.

This group agrees with the suggestion that partnerships through corporate social responsibility programs can help to coordinate messages and raise awareness of healthcare issues better than individual organisations each delivering their own messages (14:+2). The group also agrees that different sectors (government ministries, schools, hospitals, etc.) should work together to build a repository of knowledge on health awareness and health education levels among the various communities in the country (16:+2).

They strongly disagree with the notion that there are no measures to improve health literacy that have been implemented (8:-5) or there is no baseline upon which the results healthcare communication efforts can be judged (4:-1). They also dismiss the suggestion that very little thought is given to the planning of health promotion campaigns and that they are always reactive rather than proactive (15:-3). However, they support the assertion that most healthcare campaigns are 'hit and miss' (25:+1).

The participants disagree that the division of responsibilities between health entities with regards to public health promotion and public health education is not clear (31:-4); they also disagree that healthcare communication focuses on disease literacy and not health literacy (5:-4). However, they agree that healthcare communication is based on dictating messages, not on community involvement (11:+1), and that promoting public health is a new idea for Qatar (22:+1).

The participants were neutral to the suggestion that there is little or no coordination of health communication messages amongst various government entities (6:0) and believe that healthcare promotion messages alone are not effective in changing lifestyles behaviour of people. Rather, they believe that government intervention is also necessary, such as regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices (37:+4). They also agree that the authorities should organise events that encourage the community to adopt healthy lifestyles on a regular, on-going basis and not just as "one-off" events (42:+3).

They strongly believe that food labelling should be informative and include nutrition facts, serving sizes and calorie counts (46:+4) and agree that the quality and accuracy of health information given to the public must be regulated. This rating was still positive (26:+1).

They dismiss the notion that the approvals for health promotion campaigns are not decided by healthcare communication professionals, but rather by people who have financial approval authority who may not understand the long-term value of such investment (21:-3). They also dismiss the notion that there is no cross-government coordination to encourage people to improve their lifestyles (34:-3). They endorsed the idea of creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise (12:+2).

They disagree that there is no pre-approved yearly budget for healthcare promotion and that this may prevent healthcare communication professionals from researching and designing effective promotion campaigns (19:-1). They also disagree that the country should devote a larger budget to improving health literacy and that a promotion of healthy lifestyles is needed (30:-1).

The group strongly feels that health campaigns should target young people, because of the belief that advice is more effective if it is learnt at an early age (18:+5). They agree with the assertion that educating mothers on lifestyle choices is an important measure that can improve the health of other family members (27:+5). The group also feels that health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise (24:+2). The participants were indifferent to the proposition that people are easily influenced by the eating habits of their friends and colleagues (3:0) but they agree with the assertion that social media is the best medium for raising awareness of health issues in the country (53:+3).

The group do not believe that the general awareness of current health communication campaigns is very low (9:-1) but believe that many campaigns have proven ineffective, including the organ donation promotional campaign, and the '*Kulluna*' health communication campaign as they did not provide much useful information to the public (51:-5). They were also skeptical of the suggestion that the "Step into Health" campaign that encouraged walking was a success (48:-1), and they were not convinced that the 'Your Health First' campaign is a genuine example of positive collaboration between health institutions (52:-1). They agree that some health communication campaigns should be targeted at mothers (13:+1).

They remain indifferent to the suggestion that, despite the investment in health services, very little research is being done to discover the reasons why many people have unhealthy lifestyles (45:0).

4.3.2 Healthcare consumers study

4.3.2.1 Broadly positive attitudes

There are no broadly positive factors in the healthcare consumers group.

4.3.2.2 Broadly negative attitudes

Factor 1: Personal responsibility and government intervention more effective than mere persuasion

Factor 1 has an eigenvalue of 4.32 and explains 8% of the study variance. There are seven participants significantly associated with this factor. Participants are of mixed genders and nationalities, they are all university graduate and have been residing in Qatar for at least three years, Q sorts comprising this factor are 7202, 7199, 7243, 7204, 7308, 7306, and 7323.

This group feels very strongly that health promotion will not work unless individuals have the personal drive and the willingness to change. Individuals need to understand the value of a more active and healthy lifestyle choices before they will adopt such behaviours (48: +5).

This group has given low ranking to the notion that suggests health promotion campaigns alone can make little or no difference in changing consumers' behaviour (11:-1).

They showed agreement with the notion that organisations need to see tangible benefits and short-term results from any health promotion activity if they are to invest in it. The group also agreed with the proposition that organisations do not find the prospects of long-term benefits as attractive as immediate benefits (16: +1).

They have shown agreement in their awareness of health promotional campaigns but cannot recall any that took place in the past few years (2: +1). They disagree that health promotion campaigns are quite old-fashioned which makes it hard for many people to recall them, relate to them or get inspired by them (5: -1).

They believe that there is very little communication of health-related events and activities (9: +3) and that the poor quality of health promotion campaigns could indicate that some local health communication staff lack

skills and knowledge in this field (4: +2). They agree that communication of health information is not clear and in most cases are not aligned with the different needs of the various communities that reside in the country (35: +2).

They do not believe that the '*Kulluna*' health communication campaign was too generalised to be effective (57: -1) but expressed lack of knowledge of the campaign and agreed that it had failed to make them change their behaviour (52: +1).

Members of this group gave low ranking to the 'Step into Health' campaign (55: -4) and neutral ranking to the 'Your Health First' campaign (56: 0). They disagree with the proposition that most healthcare campaigns are not well targeted and are therefore ignored (14: -4).

There was also disagreement that the 'Think Pink' walk and the 'Wheels and Heels' campaign are examples of campaigns that they recall or that have influenced their behaviour (54: -1).

They showed disagreement with the notion that people do not look after their health because they know they have access to free healthcare (22: -1). They gave the highest ranking of any group to the suggestion that most people care more about the way they look than they do about their diet (20: +3).

This group also agree that the Qatari lifestyle encourages bad eating habits and that the terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats community because of a widespread belief that the lifestyle means most people will eventually gain weight (28:+4).

However, they strongly disagree that religious practices such as timings of prayers, fasting and a culture of eating at night time make it more difficult for people to adopt healthy lifestyle habits (32:-4).

There is a strong belief among members of this group that the younger generation is learning bad habits, such as smoking, because these behaviours seem to be widely accepted (26: +4). The group strongly believes that children order fast food to be delivered to their homes and that this is encouraged by their parents (25: +4). They also believe that the younger generation is learning bad habits from their home environments where their eating habits are influenced by mothers who have low health literacy (19: +1).

This group agrees that young people pick up bad eating habits from school, and they feel that the adherence to serving healthy food in school canteens is merely superficial (44: +1). They also agree that smoking is widespread and socially accepted; they strongly believe that most smokers are aware of the health risks associated with smoking but are not willing to change their habits (23: +5). However, they disagree that people do not want to change their lifestyles, especially in relation to smoking, but feel that health campaigns can do little to affect them (8: -5). Members of this group were not aware of any anti-smoking campaign that took place and they could not recall its message (53: -1).

The group agrees that anti-smoking "fear advertising" will not work and that positive reinforcement is more effective and the use of humour may work better in the Qatari setting (40: +2). They stress that anti-smoking campaigns targeted at Qataris will not be effective as smoking is an embedded part of local culture (42: +2).

They disagree that designated non-smoking areas are not respected (43: -5). They agree that smoking *argela* has become very popular among Qatari women (41: +1).

The group disagreed that, "sports facilities are built to meet the requirements of men, not women." (33: -1).

As for the barriers that prevent them from adopting healthier lifestyles, the group ranked hot weather as a major obstacle that prevents them from integrating walking into their daily routine (36: +3) in comparison to high traffic obstruction, which they were indifferent about (3: 0). They agree that among other barriers is a clear lack of healthy food outlets (45: +1) as well as expensive gym subscriptions, which prevent people from exercising indoors (46: +1).

They agree that print media advertising is a waste of money and time and will not deliver the desired messages to people effectively. However, they believe that TV and social media are the best mediums for raising awareness of health issues (1: +3) and they gave a neutral rank to Twitter as a medium for communicating health-related information to the community (17: 0).

This group disagrees with the suggestion that the existence of poorly integrated, diverse communities in Qatar makes mass communication techniques (30:-2). The group also disagrees that health communication professionals are generally not effective at engaging with the community (10: -2).

The group disagrees with the notion that healthy lifestyle campaigns are not effective because people demand immediate results and are therefore reluctant to follow long-term diet and exercise regimes (15: -2). They disagree with the suggestion that most Qataris believe that support from a hospital is all they need to safeguard their health (18: -2).

Factor 2: Weak campaigns, not Qatari culture, to blame for poor results

Factor 2 has an eigenvalue of 4.27 and explains 8% of the study variance. There are seven participants significantly associated with this factor. They are of mixed genders of Arab nationals working as expats, with one Qatari

local. Q sorts comprising this factor are 7203, 7197, 7248, 7303, 7304, 7308, and 7260.

This group disagrees that the typical Qatari lifestyle is part of a deeply rooted culture and is therefore difficult to change (27: -3). They also disagree that the local culture relates bad health and illness to fate (29: -2). However, there is a belief among the group members that most Qataris believe that support from a hospital is all they need to safeguard their health (18: +1). They disagree that people in Qatar don't look after their health because they know they have access to free healthcare (22: -4) and that religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits (32: -4).

The group in this factor have ranked as neutral the statement that traditional Qatari cultural dress may discourage people from walking (34: 0) and also the notion that there is too much conflicting information about which foods are healthy or unhealthy to allow people to make informed decisions about what to eat (49: 0).

The participants in this factor feel strongly that communication between healthcare institutions and the community is weak (3: +4) and agree there is a lack of awareness of health promotional campaigns (2: +1). They agree that there is very little communication of health-related events and activities that take place locally (9: +1). The group also believes that communication of health information is not clear and not aligned with the needs of the various communities (35: +2).

They agree that the poor quality of health promotion campaigns indicates that local health communication staff lack skills and knowledge in this field (4: +2). They also agree that health promotion campaigns are quite old-fashioned, do not relate to them and are therefore not inspiring to them on a personal level (5: +1).

The group agrees that healthy lifestyle campaigns are not effective because people demand immediate results and are therefore reluctant to follow long-term diet and exercise regimes (15: +2).

The group members have a strong view on what they believe is effective when it comes to health communication. They will only be motivated to adopt a new behaviour if the message helps them to understand the value of that particular behaviour (12: +4). They agree that individuals need to understand the value of healthy lifestyle choices and have the personal drive and willingness to change in order for them to adopt such new behaviours (48: +3).

They also agree that for people to adopt a healthier lifestyle, government enforcement measures, such as regulation of fast food advertising and subsidised fruit and vegetable prices, are required (11: +3).

As for the environmental barriers, they agree that the hot weather prevents them from integrating walking into their daily routine (36: +3) and they stress that neighborhoods need more public spaces to allow people to integrate light exercise into their daily routines (39: +4). The group gave the highest rating of any group to the notion that a lack of pedestrian infrastructure prevents them from integrating walking into their lives as a daily and habitual activity (37: +5). The group's other highest rating was given to the suggestion that expensive gym subscriptions prevent people from exercising (46: +5).

They disagree that TV and social media are the best ways to raise awareness of health issues in Qatar (1: -1) and they do not agree that Twitter is the best medium for communicating health-related information (17: -3).

This group agrees that the '*Kulluna*' health communication campaign failed to make them change their behaviour (52: +1) and that it was too

generalised to be effective (57: +1). However, they disagree with the notion that the '*Kulluna*' campaign did not provide much useful information (51: -1). The group members ranked neutrally the influence of other campaigns and their effect on behaviour change, such as the 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding (54: 0). However, they disagree with that the 'Your Health First' campaign has created general awareness of health issues amongst health consumers (56: -1).

This group was not aware of any anti-smoking campaign (53: +1) and they agree that designated non-smoking areas are not respected or enforced (43: +3). They believe that most smokers are aware of the health risks of smoking but are not willing to change their habits (23: +1).

They disagree that anti-smoking 'fear advertising' will not work and that positive reinforcement appeals and the use of humour may work better in the Qatari setting (40: -1). They also gave a low ranking to the suggestion that smoking *argela* has become very popular among Qatari women (41: -2).

They disagree that people in Qatar are too busy to prepare healthy food to eat every day. (50: -1) and that people don't want to change their lifestyle, so the messages of health campaigns can do little to affect them" (8: -5).

This group disagree that changing the lifestyles of older people is very difficult and is a waste of time and money (21: -5). They also disagreed with the notion that people care more about the way they look than they do about their diet (20: -1).

Members of this group were neutral in their response to the notion that children order fast food to be delivered to their homes, that this is encouraged by their parents (25: 0) and that the younger generation is learning bad habits from adults, such as smoking, because they seem to be widely accepted practice (26: 0).

They disagree that schools' adherence to serving healthy foods in their canteens is superficial (44: -2) and they also disagree that there is a lack of healthy food outlets in the country (45: -2).

Factor 3: Personal responsibility more important than environmental factors or campaigns

Factor 3 has an eigenvalue of 3.30 and explains 6% of the study variance. There are four participants who are significantly associated with this factor. They are of mixed genders and nationalities, with one Qatari local .Q sorts comprising this factor are 7212, 7311, 7245, and 7338.

This group does not feel motivated by the local health campaigns as they strongly believe that understanding the value of a certain behaviour will make them more motivated to adopt that behaviour (12: +4). Furthermore, they strongly believe that health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value of adopting a more active life and healthy lifestyle choices (48: +5).

They agree that health communication professionals in Qatar are generally not effective at engaging with the community (10: +3) and that information about health campaigns and events usually appears in the local papers only after they have taken place (7: +4). The group also agrees that sports events are widely advertised, but generally they are not interested in them (47: +2).

They disagree that most healthcare campaigns are not targeted at them, so they just ignore them (14: -4). They also disagree with the idea that there is too much conflicting information about which foods are healthy and unhealthy for people to make informed decision about what to eat (49: -3). They agree that health promotion campaigns are quite old-fashioned and that they don't relate to them or feel inspired by them (5: +1).

They disagree that people care more about the way they look than they do about their diet (20: -1). They agree that the level of health literacy of Qatari women is very low and that this can influence the lifestyle habits and practices of the families (19: +1).

They disagree that traffic is an obstacle that prevents people from playing sports regularly (38: -3) and that hot weather prevents them from integrating walking into their daily routines (36: -5). They also gave the lowest ranking of any group to the notion that expensive gym subscriptions prevent people from exercising (46: -1) and to the suggestion that people in Qatar are too busy to prepare healthy food to eat every day (50: -4). However, they agree that lack of pedestrian infrastructure prevents them from integrating walking as a daily or habitual activity (37: +5).

The group agrees that there is a general lack of healthy food outlets in the country (45: +1).

They disagree that 'National Sports Day' is one of Qatar's important yearly events and that it is effective at promoting sports. (31: -3).

They strongly believe that children order fast food to be delivered to their homes and this is encouraged by their parents (25: +4). They also agree with the notion that the local culture relates bad health and illness to fate (29: +2).

They disagree that religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits (32: -2).

This group does not believe that the adherence of schools to serving healthy foods in their canteens is superficial (44: -1). They do not agree that changing the lifestyles of older people is very difficult and is a waste of time and money (21: -1). They agree that the younger generation is learning bad

habits from adults, such as smoking, because they seem to be widely accepted practices (26: +1).

They feel rather strongly that organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it and that long-term benefits are not as attractive or a priority for them (16: +3).

They disagree that parents generally prefer not to restrain their children in a car seat and that this is because they like to keep them in the seat next to them out of personal closeness and love (24: -5).

This group disagrees that people are unwilling to follow long-term diet and exercise plans because they do not deliver immediate, visible results (15: -2).

They agree that smoking *argela* has become very popular among women (41: +2) and that designated non-smoking areas are not respected or enforced (43: +3).

This group was indifferent to the suggestion that 'fear advertising' would not work and that positive reinforcement appeals and the use of humour may work better in the Qatari setting (40: 0). They were indifferent in their awareness of any anti-smoking campaign (53: 0).

They were indifferent to the notion that health promotion campaigns alone can make little or no difference to behaviour and that government enforcement is also required through measures such as regulating fast food advertising and subsidising fruit and vegetable prices (11: 0). They were also indifferent to the '*Kulluna*' health communication campaign (51: 0) and they could not recall any campaigns that have taken place in the past few years (2: 0). They agreed that health promotion campaigns are never followed through and are quickly forgotten (13: +1).

They agree that communication between healthcare institutions and the community is weak (3: +1). They also agree that the poor quality of health promotion campaigns indicates that local health communication staff lack skills and knowledge in this field (4: +1).

The group does not agree that the "Think Pink" walk, the "Wheels and Heels" campaigns and initiatives about breastfeeding are campaigns they recall and that have influenced their behaviour (54: -1).

They neither agree nor disagree with the statements that the '*Kulluna*' health communication campaign failed to make them change their behaviour (52: 0), that it was too generalised to be effective (57: 0) and that communication of health information is not clear or aligned with the needs of the various communities that reside in the country (35: 0). They disagree that the 'Your Health First' campaign has created general awareness of health issues among health consumers (56: -1).

Although this group agrees that TV and social media are the best media for raising awareness of health issues (1: +1), they disagree that Twitter is the best medium for communicating health-related information to the Qatari community (17: -1).

They disagree that the traditional Qatari cultural dress discourages people from walking (34: -1).

Factor 4: Poor targeting, timing and follow-through limit campaign effectiveness

Factor 4 has an eigenvalue of 4.21 and explains 8% of the study variance. There are nine participants who are significantly associated with this factor. They are of mixed gender and nationalities, with three Qatari nationals. In this group five participants are university students. Q sorts comprising this factor are 7210, 7211, 7242, 7290, 7320, 7319, 7327, 7342, and 7326.

This group disagrees that communication of health information is generally not clear or aligned with the needs of the various communities (35: -1). They agree that mass communication techniques are not the best communication delivery solution since communities are not well integrated and may interpret messages in different ways (30:+3).

The group strongly agrees that health promotional campaigns are never followed through and are quickly forgotten (13: +4), because these campaigns are not well targeted and consequently tend to be ignored (14: +3). They agree that a public-spirited approach to healthcare campaigns that makes the community feel cared for would be more effective (6: +4).

They agree that health promotion will not work unless one has the personal drive and willingness to change. They also agree that individuals must understand the value of adopting an active and healthy lifestyle (48: +5), but disagree that healthcare campaigns are quite old-fashioned and fail to inspire. (5: -3).

This group agrees that campaigns that encourage people to change to a healthy lifestyle are not effective as people are interested in getting quick results and immediate benefits, and therefore are not attracted to follow a long-term diet and exercise plans that do not return immediate and visible results (15: +2). They support the notion that organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, as long-term benefits are not as attractive or a priority for them (16: +3).

Members of this group are not aware of any anti-smoking campaign (53: +3) and they agree that smoking *argela* has become very popular among women (41: +2) and that non-smoking places are not respected or enforced (43: +1). However, they do not support the notion that anti-smoking 'fear

advertising' will not work and that positive reinforcement appeals and the use of humour may work better in the Qatari setting (40: -1).

This group agrees that the 'Think Pink' walk and the 'Wheels and Heels' are campaigns that they can recall but which did not influence their behaviour (54: +1).

They disagree that the traditional Qatari dress discourages people to walk (34: -4) or that the typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change (27: -1).

They disagree that changing the lifestyles of older people is very difficult and is a waste of time and money (21: -5) but agree that the younger generation is learning bad habits from adults, such as smoking, because they are seem to be widely accepted practices (26: +1).

They disagree that the lack of pedestrian infrastructure is a legitimate physical barrier to the adoption of healthy lifestyle habits (37: -3). They agree that neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine (39: +1). They also agree that there is a clear lack of healthy food outlets in the country (45: -2).

They disagree that expensive gym subscriptions prevent people from exercising (46: -1), but a more positive ranking was given to the suggestion that hot weather prevents them from integrating walking into their daily routine (36: +1).

This group agreed that most Qataris believe support from a hospital is all they need to safeguard their health (18: +4) but disagree that people are reluctant to change their lifestyle and that the messages of health campaigns can do little to affect influence them (8: -3).

They strongly agree that schools' adherence to serving healthy foods in their canteens is superficial (44: +5).

They disagree that 'National Sports Day', which is a one of Qatar's yearly events, is the one event that encourages them to change their habits and became more active (31: -1). They also disagree that other sports events are widely advertised (47: -5) but agree that information about health campaigns and events usually only appear in the local papers after they have taken place (7: +1).

They have given a relatively low ranking to the notion that the 'Your Health First' campaign has created general awareness amongst health consumers (56: -2). They have given a low rating to the impact of the '*Kulluna*' health communication campaign, which they believe did not provide much useful information (51: -1) and failed to make them change their behaviour (52: 0). Furthermore, they agree that this particular health communication campaign was too generalised to be effective (57: 0). Many indicated that they have heard of '*Kulluna*' but were not sure what it was about. One interviewee in this group queried, "Is this a campaign related to health or sport?"

They generally agree that the level of health literacy of Qatari women is very low (19: +1). They also agree that the attitude among most parents towards the use of child restraints in cars aligns with the statement, "I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving" (24: +1).

They disagree that there is very little communication of health-related events and activities (9: -1). They agree that TV and social media are the best ways of raising health related awareness (1: +2).

4.3.2.3 Broadly neutral attitudes

Factor 5: Campaigns can work but often "do not cross my radar"

Factor 5 has an eigenvalue of 4.02 and explains 8% of the study variance. There are four participants who are significantly associated with this factor. They are all males of Arabic nationalities who have been residing in Qatar

for the last 10 years. Q sorts comprising this factor are 7196, 7268, 7271, and 7328.

This group agrees that communication techniques are ineffective because communities are not well integrated and therefore tend to interpret messages in different ways (30: +3). They also agree that health promotion campaigns alone can make little or no difference to lifestyle-related behaviours because government enforcement, such as regulations of fast food advertising and subsidised fruit and vegetable prices, is also required (11: +5).

They strongly disagree that they are not aware of any health promotion campaigns, but cannot recall any that took place in the past few years (2: -5). They agree that health promotion campaigns are never followed through and are quickly forgotten (13: +1).

They agree that campaigns that encourage people to change to a healthy lifestyle are ineffective because people want immediate results and are reluctant to follow long-term diet and exercise plans (15: +1).

They agree that people care more about the way they look than they do about their diet (20: +3). They also believe that changing the lifestyles of older people is very difficult and is a waste of time and money (21: +2).

They disagree that the poor quality of health promotion campaigns indicates that local health communication staff lack skills and knowledge in their field (4: -2). They also disagree that health promotion campaigns in Qatar are quite old-fashioned and lack inspiration (5: -1). They agree that communication between healthcare institutions and the community is quite weak (3: +1).

They agree that the communication of health information is not clear or aligned with the different needs of the various communities (35: +1). They disagree that there is too much conflicting information about which foods are

healthy and unhealthy for people to make informed decision about what to eat (49: -1).

They agree that the '*Kulluna*' health communication campaign was too generalised to be effective (57: +1). They strongly disagree that information about health campaigns and events usually only appear in the local papers after they have taken place (7: -4). The group disagrees that the '*Kulluna*' health communication campaign did not provide useful information (51: -3) or that it failed to make them change their behaviour (52: -1).

They strongly disagree that anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of Qatari culture (42: -5) and they also disagree that most smokers are aware of the health risks of smoking and are unwilling to change their habits (23: -2). Furthermore, the group also disagrees that they are not aware of the "anti-smoking" campaign (53: -2). They agree that smoking *argela* has become very popular among women in Qatar (41: +2).

They disagree that there is very little communication of health-related events and activities (9: -2). They agree that TV and social media are the best mediums for raising awareness of health issues (1: +3).

Members of this group agree that the level of health literacy of Qatari women is very low (19: +1). The group was indifferent to the suggestion that the typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change (27: 0). They were also indifferent to the suggestion that the traditional Qatari attire does not encourage people to walk (34: 0) and that the local culture relates bad health and illness to fate (29: 0).

Regarding the barriers that prevent people from following a healthy life style, the group strongly agrees that expensive gym subscriptions are hindering them from taking exercise (46: +5). They agree that neighborhoods

need more public spaces to allow people to integrate light exercise into their daily routines (39: +4). They also agree that there is a clear lack of healthy food outlets (45: +4).

They were indifferent to other obstacles such as lack of pedestrian infrastructure that could prevent them from exercising (37: 0) and traffic (38: 0). They agree that the hot weather prevents them from integrating walking as habitual healthy exercise (36: +2).

They strongly disagree that sports facilities in Qatar are built to meet the requirements of men only (33: -4).

This group was indifferent to the proposition that 'National Sports Day' is a one of Qatar's important yearly events and that it could encourage them to change their habits and became more active (31: 0).

They disagree that the terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight (28: -3). They also disagree with the suggestion that sports events are widely advertised but that they are not interested in them (47: -1).

The group do not agree that the 'Your Health First' campaign has created general awareness amongst health consumers (56: -2). They also disagree with the notion that most healthcare campaigns are not targeted at them and are therefore simply ignored (14: -1).

The group agrees that the younger generation is learning bad habits, such as smoking, from adults because they seem to be widely accepted practices (26: +1). They also agree that children order fast food on regular basis and that this is encouraged by the household (25: +3).

This chapter has covered the data analysis for the two researched groups, namely healthcare providers and healthcare consumers. This was followed by

an in-depth interpretations of the analysis. The data collected have identified a set of attitudes in each group. In summary, this chapter has explained that the healthcare providers' positive attitudes comprised factor 1, while their negative attitudes comprised factors 2 and 5, and neutral attitudes comprised factor 3 and 4. As for the healthcare consumers group, there was no positive factor in the analysis to be interpreted, while negative attitudes comprised factors 1, 2, 3 and 4, with 5 a neutral factor. ■

Chapter 5

Discussion

The analysis of the data collected from the healthcare providers' group and the healthcare consumers' group resulted in a total of 10 factors reflecting the range of opinions expressed by participants.

The providers' group factors are:

Factor 1: A cautious but positive impression of health literacy levels and public health campaigns — "We are doing well."

Factor 2: Uncoordinated, poorly targeted and too focused on disease literacy — "Must do better."

Factor 3: Coordination is the key — "Let's coordinate in order to do better."

Factor 4: The insider's view — "Community involvement is key."

Factor 5: For an interventionist approach — "Intervention by the authorities is key."

The consumers' group factors are:

Factor 1: Personal responsibility and government intervention are more effective than mere persuasion.

Factor 2: Weak campaigns, not aspects of Qatari culture, are to blame for poor results.

Factor 3: Personal responsibility is more important than environmental factors or campaigns.

Factor 4: Poor targeting, timing and follow-through limit campaign effectiveness.

Factor 5: Campaigns can work but often "do not cross my radar".

This research set out to achieve two goals. Firstly, the research aimed to shed some light on healthcare providers' opinions, attitudes and viewpoints on the approach to encouraging health literacy via health awareness campaigns, and the resources that maybe required to further develop health literacy. Secondly, the research investigated whether healthcare consumers felt motivated to change their behaviours by local health promotion campaigns, and to shed some light on some of the barriers that prevented them from adopting the healthy behaviours advised by these campaigns.

This research revealed three predominant attitudes about health literacy through healthcare promotion and the effectiveness of the delivered healthcare campaigns among the healthcare providers group. Differences lay in participants' judgements of the current adequacy of the situation and in their suggestions for ways forward. Among the healthcare consumers group, four predominant attitudes about the usefulness and effectiveness of healthcare promotion ranged from a highly positive emphasis on personal responsibility and willingness to highly negative ("too many barriers") and suggestions for greater community engagement as essential to healthcare promotion campaigns.

Factors in both groups were studied separately and in relation to each other, in order to find both the common and the distinct attitudes and opinions that are held about the research topic.

5.1 Healthcare providers

In order to reflect the distinct attitudes and to ensure inclusion and the concept of holism (Brown, 1980), Table 5.1 reflects common and contrasting views of the five providers' factors on each statement. Follow-up interviews

are included in Appendix 21 to expand and to explain further participants' opinions.

No	Group: Healthcare Providers: Study Statements	F 1	F2	F3	F4	F5
1	Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar		x		x	x
2	The '*Kulluna*' health promotion campaign messages were clear and have affected consumer behaviour in a positive manner	x	x	X	x	x
3	People are easily influenced by the eating habits of their friends and colleagues				x	x
4	Qatar has no baseline upon which it can judge the success of its healthcare communication efforts	x		X	x	x
5	Healthcare communication in Qatar focuses on disease literacy and not health literacy	x	x	X	x	
6	There is little or no coordination of health communication messages in Qatar amongst various government entities	x		X		
7	Anti-smoking 'fear advertising' will not work in Qatar; positive reinforcement appeals and the use of humour may work better in the Qatari setting		x	X	x	x
8	No measures to improve health literacy have been implemented in Qatar	x	x	X	x	x
9	The general awareness of current health communication campaigns is very low in Qatar	x		X	x	
10	The quality of health communication campaigns in Qatar is generally poor	x		X	x	
11	Health care communication in Qatar is based on dictating messages, not on community involvement	x	x	X		x
12	Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea					x
13	Health communication campaigns should be targeted at mothers			x		x
14	Partnerships through corporate social responsibility programs can help to coordinate messages and to					x

No	Group: Healthcare Providers: Study Statements	F 1	F2	F3	F4	F5
	raise awareness of health care issues better than individual organisations, each delivering their own messages					
15	Very little planning is given to health promotion campaigns in Qatar; they are always reactive, not proactive	x		x	x	
16	Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar					
17	Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits					x
18	Health campaigns should target young people, because advice is more effective if it is learnt at an early age			x		
19	Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns	x	x	x	x	x
20	Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate	x	x			
21	Approvals for health promotion campaigns are not decided by healthcare communication professionals; they are decided by people who have financial approval authority and who may not understand the long term value of such investment	x		x	x	
22	Promoting public health is a new idea for Qatar	x		x		x
23	Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health			x	x	
24	Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise		x	x		

No	Group: Healthcare Providers: Study Statements	F 1	F2	F3	F4	F5
25	Health literacy is not measured in Qatar so healthcare communication is 'hit and miss'	x				
26	The quality and accuracy of health information given to the public must be regulated					
27	Educating mothers about lifestyle choices is an important measure that can improve the health of other family members					
28	The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits					
29	The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful		x		x	x
30	Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles				x	
31	The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar	x			x	x
32	Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health	x	x	x	x	
33	The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population			x		
34	There is no cross-government coordination in Qatar to encourage people to improve their lifestyles	x		x	x	x
35	Schools play an important role in raising awareness of healthy lifestyle habits					
36	It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age					
37	Healthcare promotion messages alone are not effective in changing lifestyles ; government intervention is also necessary, such as regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices	x				

No	Group: Healthcare Providers: Study Statements	F 1	F2	F3	F4	F5
38	There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar			x	x	
39	Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles	x	x			
40	Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results	x	x	x	x	
41	The government should impose a ban on fast food advertising in Qatar		x	x	x	
42	The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, on-going basis and not just as 'one –off' events		x			
43	Qatar is making good use of the country's sports facilities to encourage people to exercise regularly	x	x		x	x
44	The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are among the campaigns that manage to influence consumer behaviour	x	x	x	x	x
45	Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles	x				x
46	Food labelling in Qatar should include nutrition facts, serving sizes and calorie count					
47	The current anti-smoking campaigns are effective in raising public awareness	x	x	x	x	x
48	The 'Step into Health' campaign to encourage walking is an on-going success		x	x	x	x
49	Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective	x	x	x	x	
50	The '*Kulluna*' health communication campaign was very effective	x	x	x	x	x
51	The '*Kulluna*' health communication campaign provided much useful information to the public		x		x	x

No	Group: Healthcare Providers: Study Statements	F 1	F2	F3	F4	F5
52	The 'Your Health First' campaign is an example of positive collaboration between health institutions	x	x	x	x	x
53	Social media is the best medium for raising awareness of health issues in Qatar		x	x		x

Table 5.1 Healthcare Providers Factor Comparison

The study of the five factors in relation to the providers group shows a great deal of diversity in the views and opinions between factors (thereby validating the Q-methodology approach), alongside much similarity in the opinions of the individual participants within each factor. As an example, the participants of factor 1 took a relatively positive view of the effectiveness of health literacy and public health promotion campaigns. They believe that Qatar health bodies were actively raising awareness of healthy lifestyles through a variety of campaigns; that various local entities were coordinating their efforts to deliver campaigns with maximum impact, and that the significant investment in health in recent years has not neglected research into understanding the underlying factors contributing to unhealthy lifestyles. Factor 1 participants reject any negative notions about health campaigns and did not believe these campaigns were 'hit and miss'. Rather, they view the campaigns as the product of well-coordinated efforts. They believe that expertise in the healthcare communication field was not lacking. Factor 1 participants were cautiously optimistic that campaigns have delivered the awareness they were intended to achieve, such as the '*Kulluna*' initiative, a national health and safety awareness campaign based on the premise that it is the responsibility of everyone to take action to improve their health, wellbeing and safety, the 'Step into Health' campaign, which encourages more people to walk for fitness, and anti-smoking campaigns,.

Factor 1 participants were also in agreement that Qatar needs to build a repository of knowledge about health literacy and health promotion

awareness, and that the quality and accuracy of health-related literature should be regulated.

In contrast, participants in factor 2 disagreed with the assertions of the participants in the factor 1 cohort, believing instead that no measures have been implemented to improve health literacy, that coordination between various public entities was low, and that health campaigns were 'hit and miss' in terms of their quality and effectiveness to alter consumer behaviour.

The participants of factor 5 agreed with the negative viewpoints expressed by members of the factor 2 group, while participants of factor 3 were neutral about the current status quo, holding views more comparable with those of the members of factor 4.

There are also similarities in the opinions of individuals across the factors. As an example, all five factor groups believed that there was a pre-approved budget devoted to healthcare communications. However, four of the five groups believed that Qatar should devote a larger budget to improving health literacy in the country.

Despite a widely held belief among all groups that social media was the best medium for raising awareness of health issues, three of the five groups did not see social media as the best medium to deliver health related information. They agreed that coordination and cooperation were the keys to regulating quality and accuracy of information. There was unanimous agreement that the relation of lifestyle related knowledge should start at home and school from a very young age, and that more emphasis should be given to the integration of sport and exercise into the school day. A majority of participants believed that daily exercise should be habitual rather than just an 'add-on' to the school curriculum.

All factors in this group also expressed beliefs that food labelling should be improved to provide greater detail about ingredients, portion sizes and calories so people can make informed lifestyle choices.

The five healthcare provider's factors can be clustered into three distinct themes summarising the attitudes and opinions that the participants held in regards to healthcare literacy and communication.

The three themes are discussed below in conjunction with the follow-up interviews.

Appendix 21 lists all the healthcare providers' views and comments that were captured during the follow-up interviews. Incorporating the views and comments from the follow-up interviews with the five factors from the provider group, three themes can be identified:

1. "We are doing well — but there is room to improve."
2. "We are not doing that well — we must do better."
3. "How can we do better? Coordination is the key to possible solutions."

5.1.1 "We are doing well — but there is room to improve"

This theme of 'room for improvement' reflects the cautious belief that Qatar has a baseline upon which it can measure the success of its health communication efforts and that there are existing measures of health literacy which are being implemented.

Some healthcare providers also agreed that these measures are being improved by health authorities; none of the participants could name any of these measures.

Some participants suggested that promoting public health is not a new idea in Qatar. However, some providers expressed the opinion that although

health public awareness campaigns do exist, they were not actively measured and in many cases were not followed through. Q sort 7215 mentioned: *"Promoting health is not a new idea as there have been campaigns for many years and the public is generally aware of them, but their impact is not certain."* This point was also emphasised by Q sort 7244, who remarked: "*Qatar is doing all it can to promote health and provide services. However, the continuous effort in doing so is very limited."*

The group in this theme disagreed that healthcare communication was based on dictating messages, and not community involvement. There was also disagreement about the assertion that the general awareness of healthcare communication campaigns was very low among healthcare consumers.

There was disagreement about whether healthcare communication focuses on 'disease literacy' rather than 'health literacy', and on the topic of whether healthcare providers are focusing more of their efforts on educating the general public about various diseases, as opposed to educating them about how to adopt healthier lifestyles. However, Q sort 7226 commented that: *"Most, if not all, of the conferences and events organised by healthcare entities are disease focused, as there is a public demand for this",* while Q sort 7312 stated "*Focus is on disease management more than prevention", I also know that many medical lectures and events are open to the general public."* Q sort 7233 stated: *"The focus of healthcare communication should be more on the prevention than cure."*

Focusing on disease education can provide some benefits to the general public, but this must be done in coordination with and backed up by proper support processes. Q sort 7312 commented: "*We need to educate the people in regards to certain diseases, but mostly focus on prevention while educating and we must have a system that support us to deliver to promises we make to the public."*

Recent literature on some disease promotion in Qatar has called for various community support personnel to help in spreading change of behaviour messages that are directed to the public as a more fruitful strategy. This is opposed to the current practice of just disseminating disconnected messages, such as breast cancer prevention campaigns (El Hajj, Maguy Saffouh, and Yousra Hamid, 2013).

Participants in this theme believe that local entities are more interested in impressing the public with new hospitals than in investing in community awareness and health education programs. Some participants believed that the country was more focused on building infrastructure to deal with the outcomes of disease, rather than promoting preventative measures that would ultimately keep people out of hospitals. As commented by Q sort 7275: *"This is quite obvious in Qatar through the sheer number of hospitals and health facilities that are being built."* Q sort 7233 noted: "*We have many hospitals but no places to exercise."*

Participants in this theme support the notion that Qatar is actively raising awareness of healthy lifestyles through a variety of programs and activities that target various community groups. Q sort 7250 subscribed to this viewpoint: *"Health communication is very noticeable everywhere in Qatar through all media outlets.*" They disagreed with the statements: *"There is very little planning going into public health promotion",* and *"The campaigns are reactive and not proactive".*

Participants who supported this theme agreed that lifestyle campaigns were supported by Qatar's policy makers. There was a general belief that policy makers and others in authority understood the value of these campaigns, their long-term investment benefits and their long-term commitment demands. Q sort 7228 commented: "*Health awareness campaigns are supported - cancer public awareness promotion for example — cancer public*

health promotion and prevention awareness has been a strategy for at least three years now. However, I think a national health awareness strategy that promotes healthy lifestyles is needed and not the unplanned isolated efforts we see today."

Some participants expressed the view that investing in such a strategy would require solid research, including gathering baseline data as an initial step. Q sort 7215 said: "*Qatar has no real public health department to look at statistics. To enable, for example, the development of a national awareness strategy, you just have to start from zero."*

Although many healthcare providers pointed out the need for more research, there was acknowledgement of some research efforts which were already underway. Q sort 7194 commented: *"Research is the key to the foundation of growth. From research findings you get an indication of what are the issues and where can you put your resources. We are always doing research."*

While there was general agreement that coordination efforts between government entities to encourage healthier lifestyles existed, adherents to the 'room for improvement' school of thought stated that these efforts needed to be nurtured. The value of such coordinated efforts has been also expressed in the literature in many developed countries and by many researchers in the field (Kickbusch, Ilona, 1997; Jordan, Joanne E., et al., 2008). Some participants encouraged the idea of building a common repository of knowledge of health awareness among the diversified communities of Qatar's widely multicultural population.

The group in this theme rejected the notion that a deficit in healthcare communication skills and professional personnel had resulted in poorly designed health promotion campaigns. In fact, there was consensus on the value of the corporate social responsibility programs which they believe have been successfully implemented in Qatar. Participants believed many of these programs had been very effective in raising awareness of specific health and

safety issues through community involvement, coordination and government support. These programs were carried out by professionals in this field. Q sort 7272 commented: *"Many organisations share programs now and work closely with the Qatari community."*

Although, overall, the rating of health awareness campaigns in Qatar was quite low within the 'room for improvement' group, several participants referred to and defended specific campaigns running at the time this research was carried out. Q sort 7227 commented: *"The Kulluna campaign was designed and operated by healthcare providers that directly interact with the community. It had consistent messages, not a one-off message."* Meanwhile, Q sort 7206 stated: *"I think it's important to note that, while Qatar is doing its best to promote healthy lifestyles, perhaps having too many campaigns dilutes messages and confuses audiences."*

Some believed that the quality of health information given to the public was of a high standard and mostly accurate. However, some participants recommended further cooperation in health information sharing and regulation amongst the various health entities. Q sort 7347 remarked: *"I work in the hospital but I don't know what to make of the messages in the ads and who is sending what message."* Although some agreed that there was some cross-government coordination to encourage people to improve their lifestyles, this coordination was seen by some to be quite limited and short-lived. Q sort 7250 commented: *"Cross-government coordination only appears most active when they try to make use of the amazing facilities they have in Qatar."*

Although several participants were in agreement that there was a need for an overall healthcare committee to coordinate and drive public health promotion campaigns, others believed that such a committee could delay decision-making and therefore delay campaigns. Q sort 7206 said: *"I think*

there are already plenty of committees set up, and unfortunately very little results, therefore there is no need to have more."

This theme questioned the need for an overarching, widespread intervention of government bodies, instead supporting the view that individuals needed to take personal responsibility for their lifestyle choices. Q sort 7251 commented: *Members of the public have the right to choose their eating habits, and government has no right to ban fast food."* Q sort 7345 stated: *"People have independent views on healthy eating,"* while Q sort 7228 said: *"Things which I consider healthy may be considered unhealthy for another, and vice versa."*

Participants who agreed with this theme also tended to be of the view that decisions to run healthcare campaigns were made by those in the communications field and that people in these professions understood their duties and responsibilities to the public clearly. Q sort 7251 commented: *"People in the communication and education fields know their responsibilities in regards to public health."*

On the topic of community infrastructure, participants noted that Qatar has built a significant number of sports facilities in the past few years which were under-utilised by athletes. Some providers suggested that one way to improve community engagement for healthier lifestyles was to better utilise these facilities for the general public, and to raise awareness of their availability. Q sort 7250 elaborated: *"Sports facilities, must be advertised more and made available to the public."*

5.1.2 "We are not doing that well — we must do better"

The literature review on the term 'health literacy' indicated that the term itself meant different things to different people, and that this had become a source of confusion and debate, especially as the concept has expanded in scope and depth, (Baker, David W, 2006)

The theme "We are not doing that well — we must do better" reflects this ambiguity as experienced by healthcare providers. Some expressed their belief that there was no common understanding of what the term 'health literacy' really means. Q sort 7193 summed up this viewpoint: "*As there was no common definition, perhaps defining health literacy at a national level should be the first step."*

This theme reflected the opinion that the awareness of health-related communication campaigns was very low and that healthy lifestyle campaigns — if they do exist — were not reaching various segments of the community.

This theme also supports the notion that promoting public health is a new idea for Qatar and that there are no real efforts to measure the impact of the awareness campaigns delivered to the public.

A number of participants expressed the view that awareness campaigns had been 'hit and miss' in nature, and were not the result of well-planned or well-executed communication efforts. Q sort 7193 commented: *"The quality of health communication campaigns is generally poor,"* while Q sort 7322 said: *"Large parts of the expat population are not getting the message through advertised communication! I bet that goes with the locals, too."*

Some healthcare providers believed that current public health campaigns were ineffective and were not making a noticeable difference. Some also believed that these campaigns were rather confusing. Q sort 7344 commented: *"Campaigns are ineffective in their current state. A multi-pronged approach is needed."* Q sort 7344 pointed out: *"The Kulluna campaign is an example of an initiative that had failed to effectively reach the general population."*

This theme also tended to agree with the statement that health campaigns in Qatar were typically reactive. Q sort 7206 remarked: *"We need forward thinking, but our campaigns are always reactive to an incident rather than proactive.*

Quick fixes and results are always a priority, making it difficult to deliver tangible results."

Some participants in this theme agreed that the effectiveness of health campaigns, as well as their ability to impact on various communities in Qatar, was being hampered by lack of communications expertise. Q sort 7344 stated: "*Communications should be tailored for specific target audiences, rather than operating from a 'one size fits all strategy."*

The delivery medium of healthcare campaigns was also questioned by some. Q sort 7283 commented: *"Most campaigns are on radio, that is easily missed if you don't listen, and a lot is in Arabic, when a vast majority of the population does not understand Arabic."*

This theme highlighted the perceived lack of coordination of messages among various health entities. Some participants agreed that healthcare entities were not seen to be collaborative, and that the division of responsibilities between various health entities was far from clear. Meanwhile, some participants expressed the belief that cross-government coordination of health related messages was not clear or noticeable. Q sort 7344 commented that there was a "*lack of effective collaboration and bureaucracy between the Supreme Council of Health, Hamad Medical Corporation and Primary Healthcare. This is due to each entity pushing their own health agenda. Government intervention is required to help people to help themselves.*" Similar comments were provided by Q sort 7233, who stated: *"Co-ordination and a long-term plan are essential to effective planning, budget spend and effectiveness of messages"*, while Q sort 7250 commented: *"Healthcare awareness is a collaborative work effort that requires commitment and dedication from many entities, starting with government's related ministries and including hospitals, schools and public social and family associations. The task is huge."*

Those in the cohort who agreed with this theme tended to support the assertion that campaign budgets were not decided by healthcare communications professionals, but rather by those with financial authority, who were not necessarily knowledgeable in the health communications field. This state of affairs, participants agreed, made it difficult to plan long-term campaigns. Some participants expressed the view that campaigns which were planned on an on-going basis did not tend to be supported by healthcare providers, and that the campaigns which did attract support did not tend to last long enough to make a difference. Although there was common agreement that budgets were allocated to healthcare communications, some providers stated that more funding was needed

This theme supported the notion that research and education was vital as a baseline from which better health awareness campaigns could be designed. There was a view expressed by some providers that there was very little research done to date in Qatar to investigate why people make bad lifestyle choices. Q sort 7194 stated: *"Research is the key to a foundation of growth. From research findings you get an indication of what are the issues and where can you put your resources. Education is the next step."* Q sort 7312 commented: *"I am not aware of any research investigating health literacy in Qatar, or any research related to lifestyle choices."*

This group also strongly agreed on the importance of regulating healthcare related information to the public in terms of accuracy and quality. Q sort 7344 elaborated: *"I think different entities need to assess, recognise mistakes and regroup."*

5.1.3 "How can we do better? Coordination is the key to possible solutions"

This theme represents a positive solution mode. The majority of providers in the public and private sectors recognise the need for change, and also believe

that the resources are available to make such sustainable change, but that the key is coordination.

Some healthcare providers in this group asserted that defining the term 'health literacy' should be the first task, so that all healthcare entities would then work from one common understanding.

The members of this theme were strong champions of the role of research in the process of building effective and measurable health awareness campaigns. Q sort 7194 stated it succinctly: "*Research is the key to a foundation of growth.*" The group also viewed research as a pathway to the development of a repository of knowledge on health awareness and health education amongst the various communities in Qatar society, which could serve as the foundation for designing, delivering and measuring effective healthcare intervention efforts.

The various healthcare providers that comprised this theme, across both the public and private sectors, supported and agreed on the importance of collaboration and coordination. Participants expressed a belief that only in connecting the various local efforts would successful healthcare awareness programs eventuate to support long-term healthy lifestyle changes across the broader Qatar population. Q sort 7233 noted: "*Coordination and a long-term vision are essential to effective planning; also it is important to understand the various backgrounds and economic status of people to choose better ways to send the message.*" Q sort 7250 supported a model where various entities from a range of fields across government and the private sector worked jointly with healthcare providers towards common health-related goals, stating: *"Healthcare awareness is a collaborative work that requires commitment and dedication from many entities, starting with the government's related ministries, and including hospitals and schools, as well as public, social and family associations."* Q

sort 7321 elaborated: "*We need to make collaboration and coordination a priority, but we need to understand who we targeting first."*

Coordination and collaborative efforts were perceived by providers as crucially important to advance a pro-active approach to community health. Q sort 7275 commented: "*We need to coordinate our messages and reach the public in an effective manner."* Q sort 7283 added: *"Raising awareness, particularly on health issues, should be a collaborative effort to keep stakeholders engaged in programs or campaigns. There should be a unified goal and implementation plans to work on, and the same messages."*

Members of this theme supported the concept of coordination as key to healthcare solutions. They have also stressed the point that cooperation will no doubt bring about some budget savings. Campaigns that can run longer will be more effective in affecting change and that will require additional budgets. Q sort 7226 commented: "*Co-ordination is essential to effective planning and better budget spending."*

This group suggested that the highest authority in Qatar's health system, The Supreme Council of Health (SCH), should lead these coordination efforts. Q sort 7343 stated: "*Different sectors need to work together to promote healthier lifestyles under the guidance of one supreme health promotion body to ensure coordination and consistency."*

Participants in this theme also stressed the need to focus more on providing health information and good advice in order to empower people to take charge of their lifestyle choices, possibly by creating a joint healthy lifestyle centre and hotline to advise the public on lifestyle-related issues like diet and exercise. The idea of building a coordinated, trusted and informative medical website or/and medical channel to support public health information needs was also mentioned as a way forward by some members of this theme.

As Q sort 7193 commented: *"Health authorities should collectively work and provide health information sources to educate the public."*

In addition, this cohort supported the concept of delivering on-going health awareness campaign programs and events to continuously remind the public of the benefits of following healthy lifestyle choices as well as providing more informative food labelling. Q sort 7193 also commented: *"Food labelling in Qatar should include at least nutrition facts, portion sizes and calorie count."*

Some providers in this theme supported the idea of forming an integrated committee under the auspices of the Supreme Council of Health, empowered to coordinate healthcare awareness communication efforts, as well as to support the delivery of responsible and accurate healthy lifestyle advice across the nation.

Q sort 7190 summed up this view: *"I support having one committee that will overlook and mainly coordinate the communication work of all healthcare institutions. I believe they should all deliver on the same strategy. I think a good health communication strategy set by the Supreme Council of Health and followed by all healthcare institutions, with the help of marketing and communication specialists, would give a big impact."* However, other members of the group stated that such a committee would be ineffective and would merely add to the existing layers of bureaucracy. Q sort 7206 was of this mindset: *"I think there are already plenty of committees set up, and unfortunately very little result. Therefore, there is no need to have more."*

Unsurprisingly, there is widespread consensus among healthcare providers that a nutritious diet, and a lifestyle incorporating adequate sport or other forms of physical exercise, needs to be encouraged from an early age. Q sort 7344 commented: "*Sport, such as swimming, and healthy food in school canteens, anti-smoking awareness campaigns for teenagers, no vending machines or*

unhealthy food in public places, and the avoidance of contradicting messages, is a good start." Q sort 7312 stated: "*Awareness programs in schools and annual health check-ups, if made mandatory, will solve most health issues."*

The need for healthy eating from a young age has been documented in the US Department of Health and Human Services report *Healthy People 2000: National Health Promotion and Disease Prevention Objectives—Nutrition Priority Area* (1990) and has also been researched and documented by many scholars and researchers (for example, Bruselius-Jensen & Mikkelsen, 2007; Skinner et al., 2002; Leon et al., 2008; Cooke, 2007; San Juan, 2006; Story et al., 2008; Donnelly et al. 1996).

As culture plays a major role in lifestyle choices, this theme placed great importance on how health awareness campaigns should be culturally sensitive. It was advocated that the family unit and national culture should be the inspiration for campaigns in terms of design and delivery. Q sort 7312 was a supporter of this approach, declaring *"family and culture are the core of the problem and the key to the solution."* Health research has consistently found that promotion interventions and health awareness programs work better if the holistic social and economic influences on communities were also taken into consideration. These influences drive communities to adapt to certain lifestyles (Woolf, Steven H., et al., 2011). Research into the cultural influence of the Mediterranean diet and food patterns has also been linked to the reduced prevalence of hypertension, hypercholesterolemia, diabetes and obesity, among healthy adults (Panagiotakos et al., 2007). This suggested that addressing the role of culture and lifestyle is a vital component to addressing the existing lifestyle issues in Qatar.

The traditionally strong family bonds within local Qatari culture were seen as a powerful bridge to the promotion of better lifestyles to younger generations in particular. There was a shared view within this theme that

strong family bonds should be exploited well in the promotion of public health and awareness campaigns, for example, to reduce the widespread increase in weight problems, a problem that has seen Qatari nationals hold the unfortunate record of one of the highest obesity rates in the world (Bener, 2006; Bener & Kamal, 2005; Ng et al., 2011; Ng et al., 2014). Q sort 7244 commented: *"Using strong family bonds to encourage healthier lifestyles is a natural fit for Qataris."* Health providers in this theme advocated targeting mothers in order to best influence children from the earliest age. Q sort 7283 remarked: *"Mothers have the most influence on their children, and if they have knowledge about better lifestyle choices, they can impart it to their children from a very early age, and it will become a norm for that child."*

While the role of the family and parental involvement in food choice has been documented in the literature and is obviously crucial (De Bourdeaudhuij, Ilse, 1997) it is also widely acknowledged that schools have a major duty. Schools can have a significant impact on the lifestyle choices children make, continuing to influence their behaviour as adults and, in turn, as role models for their own children, specifically in relation to healthy eating habits, continued involvement with sport and after school/after work physical activities. Q sort 7272 supported coordination and collaboration between schools, healthcare providers, family and community groups for better end results: *"A collaborative approach with the hospital and community is important to increasing awareness."* Some providers favored a more ambitious, widespread community education approach which went well beyond targeting the family unit and schools. Q sort 7272 commented: *"Health campaigns should be targeted to all - including cooks, people who care for children, nannies and housekeepers."*

Cross-community involvement in changing behaviour has been documented in the literature (Reger, Wotan & Booth-Butterfield, 1999).

Participation and feedback was seen as integral to creating a strong and lasting impact. Q sort 7194 stated: *"Accessing various community groups holds the key to success of healthcare promotion. People like school teachers, community leaders and spokespersons have access to the community – they are the community gatekeepers and as such we need to work with and through them to deliver messages."*

Healthcare providers who represent this theme believed that the coordinators of health promotion campaigns need to focus more on the way messages were delivered and the timing of delivery.

Although some participants agreed that social media was the best method of healthcare communication related messages, many suggested that the type of audience and their literacy level should determine the message medium. Q sort 7345 commented: *"While some people believe that social media is now the best way to reach people anywhere and anytime, in promoting lifestyle campaigns, we should consider all types of media to make sure that the message reaches all categories of people in Qatar."*

Providing health lifestyle advice in a corporate setting was also encouraged. Q sort 7346 commented: *"Health communication campaigns should target individual companies to raise awareness at work place level."*

Some participants in this group were in favor of cuts on fast food advertising, specifically by limiting the timing of commercials on television. However, other members of the group were dubious about the effectiveness of advertising controls, stating a preference for a stronger emphasis on improving individual health knowledge, awareness and education. Q sort 7190 commented: *"Banning unhealthy food will not solve the problem. However, having the right education could be more efficient."*

The environmental as well as economic barriers to health promotion and disease prevention have been well documented in health literature (Orlandi,

1989, King et al, 2009). While the group in this theme has reflected on some of the barriers that could prevent people from adopting and maintaining healthier lifestyle habits, many providers suggested that building appropriate infrastructure to facilitate affordable and habitual exercise routines could be one of the most important long-term solutions. Q sort 7217 commented: "*It is more important to utilise money and energy on constructing parks across all locations in Qatar. Walking is the most affordable exercise people can adopt!"* To combat the deterrent effect of Qatar's extremely hot weather, other participants suggested the solution should focus more on building and enhancing indoor recreational facilities for public use.

A related concern for this theme was the perceived under-utilization of existing sports and exercise facilities, with some participants claiming that, in some cases, facilities were either too expensive or unavailable for public use. There were suggestions that membership fees should be modified and other ways found to make facilities more accessible across the diversified communities of Qatar. Q sort 7217 summed up the general viewpoint: *"Qatar has access to some of the best sports facilities. These need to be utilised by health institutions to build a culture of regular exercise."* Q sort 7281 believed facilities were not used to their maximum capacity because charges were high in comparison to the buying power of much of the general population. Q sort 7344 went further: "*Stadium sports facilities (gym, pool etc.) should be free for everyone. People should know about it too."*

It should be noted that, in the course of this research, it became clear that some providers had not been aware that a significant number of sports facilities in Qatar were accessible to the general public either free of charge or at government-subsidised rates.

This indicates that effective promotion and communication of the merits of existing facilities is lacking, not only in the wider population, but even within the health sector itself.

5.2 Healthcare consumers

In order to reflect the distinct attitudes and to ensure inclusion and the concept of holism (Brown, 1980), Table 5.2 reflects common and contrasting views of the five consumer factors on each statement. Follow-up interviews have been included to expand and to explain further participant's opinions as shown in Appendix 22.

No	Group: Healthcare Consumers : Study Statements	F1	F2	F3	F4	F5
1	TV and social media are the best mediums for raising awareness of health issues in Qatar		x			
2	I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar				x	x
3	Communication between healthcare institutions and the community is weak in Qatar					
4	The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field				x	x
5	Health promotion campaigns in Qatar are quite old fashioned; I don't relate to them and they do not inspire me	x			x	x
6	A humanitarian approach to healthcare campaigns that makes the community feel cared for would be effective in Qatar	x				
7	Information about health campaigns and events usually only appears in the local papers after they have taken place					x
8	I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me	x	x	x	x	x

No	Group: Healthcare Consumers : Study Statements	F1	F2	F3	F4	F5
9	There is very little communication of health-related events and activities in Qatar				x	x
10	Health communication professionals in Qatar are generally not effective at engaging with the community	x			x	
11	Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar; government enforcement is also required, such as regulating fast food advertising and subsidising fruit and vegetable prices	x				
12	When I understand the value of a certain behaviour, I am more motivated to adopt that behaviour					
13	Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten	x				
14	I feel that most healthcare campaigns are not targeted at me , so I just ignore them	x	x	x		x
15	Campaigns that encourage people to adopt a healthier lifestyle are not effective in Qatar because people expect quick results and immediate benefits	x		x		
16	Organisations need to see swift, tangible benefits and results from any health promotion activity if they are to invest in it; long-term benefits are not as attractive or a priority for them					
17	Twitter is the best medium for communicating health-related information to the Qatari community	x	x	x		x
18.	Most Qataris believe that support from hospital is all they need to safeguard their health	x		x		x
19	The level of health literacy of Qatari women is very low		x			
20	In Qatar, people care more about the way they look than they do about their diet		x	x		

No	Group: Healthcare Consumers : Study Statements	F1	F2	F3	F4	F5
21	Changing the lifestyles of older people is very difficult and is a waste of time and money	x	x	x	x	
22	People in Qatar don't look after their health because they know they have access to free healthcare	x	x	x	x	x
23	Most smokers are aware of the health risks of smoking but they are not willing to change their habits					x
24	"I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving":this is the attitude of most parents in Qatar	x	x	x		x
25	Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents					
26	The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice					
27	The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change	x	x	x	x	x
28	The terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight		x	x	x	x
29	The culture in Qatar relates bad health and illness to fate	x	x	x	x	x
30	Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways	x				
31	Qatar's National Sports Day does not encourage me to change my habits and become more active; Ijust look forward to having the day off	x	x	x	x	x
32	Religious practices such as timings of prayers, fasting and a culture of eating at night make it	x	x	x	x	x

No	Group: Healthcare Consumers : Study Statements	F1	F2	F3	F4	F5
	more difficult for people to adopt healthy lifestyle habits					
33	Sports facilities in Qatar are built to meet the requirements of men, not women	x	x	x	x	x
34	The traditional Qatari cultural dress does not encourage people to walk	x		x	x	x
35	Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here				x	
36	The hot weather prevents me from integrating walking into my daily routine			x		
37	Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity				x	
38	Traffic is an obstacle that prevents people from playing sports regularly		x		x	
39	Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine					
40	Anti-smoking 'fear advertising' will not work in Qatar; positive reinforcement appeals and the use of humour may work better in the Qatari setting		x		x	
41	Smoking *argela* and *shisha* has become very popular among women in Qatar		x			
42	Anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of Qatari culture		x	x		x
43	Non-smoking places are not respected or enforced in Qatar	x				x
44	Schools' adherence to serving healthy foods in their canteens is superficial		x	x		
45	There is a clear lack of healthy food outlets in Qatar		x		x	
46	Expensive gym subscriptions prevent people from exercising			x		

No	Group: Healthcare Consumers : Study Statements	F1	F2	F3	F4	F5
47	Sports events are widely advertised in Qatar, but I am not interested in them	x	x		x	x
48	Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle					
49	There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decisions about what to eat	x		x	x	x
50.	People in Qatar are too busy to prepare healthy food to eat every day	x	x	x	x	x
51	The '*Kulluna*' health communication campaign did not provide much useful information					x
52	The '*Kulluna*' health communication campaign failed to make me change my behaviour					x
53	I am not aware of the anti-smoking campaign that is currently taking place in Doha	x				x
54	The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are some of the campaigns I recall, but they did not influence my behaviour	x	x	x		
55	I participated in the 'Step into Health' campaign that encouraged walking, but once my pedometer stopped, so did I	x	x	x	x	x
56	The 'Your Health First' campaign has created general awareness about better health measures amongst consumers in Qatar	x	x	x	x	x
57	The '*Kulluna*' health communication campaign was too generalised to be effective	x				

Table 5.2 Healthcare consumers factors comparison

The results of the healthcare consumers' research revealed mixed, and often conflicting, views towards the propositions put forward. All groups agreed that healthcare institutions were just like any other institutions, in the sense that they needed to see a return on their investment for the awareness

campaigns they deliver. There was also consensus among the consumer groups surveyed that long-term benefits were not the primary driver of healthcare institutions, and that community engagement between such institutions and the community is rather weak in Qatar.

The consumers interviewed also broadly agreed that, in order to adopt healthier behaviour, they first needed to understand the value of such behaviour. Some believed that taking charge of one's own health was the best and the most effective way to acquire healthy lifestyle habits. On the other hand, some participants tended to place greater importance on the role of environmental and non-environmental barriers that prevented them from adopting healthier lifestyles. Barriers cited ranged from lack of pedestrian crossings, lack of healthy food outlets and the high price of gym participation, as well as a lack of government enforcement and/or poor targeting of some health awareness campaigns.

The majority of participants across all five factors in this group agreed with the assertions that younger generations were learning bad eating habits from adults, and that fast food consumption was widely accepted and encouraged by parents.

Participants of the five factors disagreed with the statement that people neglected to look after their health because they had easy access to healthcare facilities, or that the Qatari unhealthy food consumption culture and habits were hard to change or influence. They did not believe that local Qatari culture related bad health or illness to fate, nor that religious practices or traditional attire prevented people from adopting healthier lifestyle habits. The majority of participants disagreed with the notion that they actively ignored any health awareness message because they were not interested in changing their behaviour.

There was some disagreement amongst the factors on the topic of whether healthcare communication in Qatar was clear, sensitive or aligned to community needs. There was also disagreement about the notion that it was hard for people to make informed decisions about healthy food as a result of the conflicting health information in the market.

There were also conflicting opinions and views relating to healthcare campaigns, and a lack of awareness of some specifically mentioned campaigns that were running at the time this research was conducted.

The majority of the factors in the consumer group expressed agreement that community involvement was the best way to deliver lifestyle-related messages, not mass communication media. However, some participants indicated that, because community sectors were not well integrated in Qatar, an effective way to deliver these messages would be via awareness programs tailored to specific community groups. Participants also agreed that Qatar was in need of public places that facilitated habitual daily exercise and more community engagement programs.

Although most participants across the five factors agreed that social media was effective for delivering health-related awareness information and advice, participants in four out of the five factors did not agree that Twitter was the best social media for this purpose. Many seemed to be more accustomed to print media, although most believed that information about health events usually appeared in the local papers after events had taken place.

The analysis of the five factors provided four distinct attitudes/opinions that healthcare consumers expressed in relation to Qatar-based health promotion campaigns, as well as a set of barriers that were perceived to prevent people from adopting healthy behaviours supported by these campaigns.

The five healthcare consumer's factors can be clustered into four distinct themes, summarising the attitudes and opinions that the participants held in regards to healthcare promotion and the effectiveness of the healthcare communication.

Appendix 22 lists all the healthcare consumers' views and comments that were captured during the follow-up interviews. Incorporating the views and comments from the follow-up interviews with the five factors from the consumer group, four themes can be identified:

1. "Can do — personal responsibility and willingness are the keys"
2. "Can't do — there are too many barriers"
3. "Attitudes towards health promotion campaigns"
4. "Closing the gap through intervention, community engagement and better targeting"

5.2.1 "Can do — personal responsibility and willingness are the keys"

This theme represents a 'can do' attitude. Its members consider the key to better lifestyle choices is taking personal responsibility and the importance of acquiring health knowledge in order to make positive changes. Q sort 7246 commented: *"Healthy dieting is a self-discipline issue and is not related to religious or culture issues, or any other excuse lazy people come up with"*, while Q sort 7225 elaborated: *"Healthy lifestyle is a state of mind and self-discipline; health education is important but does not change the state of mind as much as personal drive does."*

Health research literature has shown that when an individual seeks to control behaviour, this can, in turn, control health, and that good health symbolises self-control (Brownell, 1991). By contrast, behavioural decisions are also the root of poor health. As personal choices are the main factor governing diet, exercise, and lifestyle, so obesity is often thought of as a

matter of personal, not governmental, responsibility. (Gostin and Lawrence, 2007). Research has also shown that if personal responsibility for health is taken within a broader social responsibility, the results could be more effective and long lasting (Minkler, 1999; Wikler, 2002; Roy, 2008).

There was also a general belief across all consumer groups involved in this research that people tended to adopt healthier lifestyle habits if they understood the value and impact of such a change on their general wellbeing, a viewpoint expressed strongly by the Factor 1 group in particular. Q sort 7243 stated: "*The first step which motivates me to be willing to change my lifestyle is to understand why it is better for me to do so",* while Q sort 7258 added: *"The key to changing behaviour is to generate awareness, and create understanding of the influence and impact of lifestyle and habit change on health. Benefits of requested change need to be clearly identified so the recipient understands 'what's in it for me'."*

As with healthcare providers, consumers were well aware that education from a young age was a key factor. Q sort 7203 commented: *"I think health awareness education and the emphasis on good food choices should begin with nursery and primary schools."*

Participants in this theme believed that many people, and particularly children, do not recognise the impact of healthy eating habits on their wellbeing. Families and schools had a responsibility to children to educate them about good nutrition and other important aspects of leading a healthy lifestyle. Q sort 7293 commented: *"Every bad cultural habit can be changed, but that requires working on the younger generation. The older generation should educate and set a good example for the young, as they are more aware of the value of adopting a healthier lifestyle than the younger generation."* Q sort 7306 agreed: *"Older people are more health conscious, therefore they need to utilise their knowledge to help the young and set a good example for them."* Q sort

7258commented: **"***Do children in Qatar understand what a healthy lifestyle consists of? Can they make the right choices? Are they encouraged by their families to make the right choices when it comes to food and exercise? These are the questions that need to be asked and addressed first."*

This theme acknowledges the need for motivation from healthcare providers and health authorities. Some participants suggested that, although some people of all ages have the personal drive to adopt healthier lifestyles, others may require more intervention strategies. Q sort 7252 commented that health bodies needed to continue to motivate members of the public: "*The more you offer healthy lifestyle advice, the more people will follow."*

Some members of this theme suggested that people of all ages may respond positively if the right intervention campaign was designed and delivered. Q sort 7225 commented: *"Why give up on older people, older people can change their habits too and they can still benefit and be a role model to younger generations. Change is a long term project, particularly when existing behaviour and attitudes are so culturally ingrained. This will require a long term strategy, with regular reinforcement mechanisms for all age groups."*

This theme group disagreed with the assertion that barriers such as lack of infrastructure to encourage walking, Qatar's hot weather and expensive gym subscriptions made it impossible for people to make better lifestyle choices. Several participants expressed the belief that people usually come up with excuses in order to avoid integrating exercise or better eating habits into their lifestyles. Q sort 7252 commented: *"If you really want something, you just do it. Your mind is strong. The climate, the claim of expensive gyms, are just excuses to not go for your goal."* Similarly, Q sort 7216 stated: **"***Traffic is not an excuse for not playing sports. That is a poor excuse."* Q sort 7290 added: "*It's all about willingness and about taking personal responsibility for your health."*

Other reasons commonly raised as deterrents to exercise, such as the impact of religious practices and lack of time, were also rejected by this theme as inadequate. Q sort 7311 stated: **"***I do not think fasting or religious practices are obstacles; in fact, fasting is proven to be healthy according to recent studies.*" Q sort 7208 commented that: **"***no one is too busy to eat well. At the end of the day, choices and information about healthy food is always available. Google is always there to help."*

5.2.2 "Can't do — there are too many barriers"

This theme reflects the 'can't do' attitude. These participants cited a long list of perceived barriers that they believed prevented people from adopting healthier behaviours in Qatar, including lack of pedestrian infrastructure, traffic obstacles, the hot weather, the large number of unhealthy fast food outlets, a comparably small number of healthy food outlets, the high cost of gym memberships, the high cost of fresh fruit and vegetables, and the poor reach of health awareness campaigns.

Participants of this theme expressed a belief that it was hard to change lifestyle behaviours amongst people not accustomed to regular exercise or a health-focused diet, especially if they were elderly. There was also a commonly held view within this group that the way of life in Qatar dictated certain poor lifestyle choices which were very hard to break. Q sort 7196 commented: "*Fast food ordering is very frequent and there is heavy dependence on cars even during nice weather, so less walking. Activities on daily mall visits are limited to eating and lazy entertainment options — restaurants and cinemas. the lifestyle here can easily influence people to develop bad habits, actually this lifestyle became the cultural way of life which is very difficult to change.*" Q sort 7260 and Q sort 7252 agreed, stating that "*the local lifestyle encouraged obesity, because there was not much else to do apart from eating."*

While participants agreed that walking was a cheap and beneficial exercise which people in Qatar could easily adopt on a daily basis, they felt it was quite dangerous to walk on the streets. Q sort 7290 commented: *"it was extremely dangerous to walk in Qatar at any time of the year due to the nature of the traffic*", while Q sort 7248 cited a lack of respect for road safety rules as a big problem and deter people from taking up walking as an exercise: "*People feel like they can flout the rules. Law enforcement is mediocre at best and that's why a lot of people who break the law don't take it seriously, because they know they will not be reprimanded. I wish there were more safe, pedestrian-friendly areas that are easily accessible to neighborhoods."*

Hectic traffic, coupled with the lack of pedestrian-friendly streets, was seen as a big barrier to walking around in Qatar's urban areas for many participants. Q sort 7216 commented: "*I do want to walk on a more regular basis, but the lack of infrastructure and busy roads prevent me. It's very dangerous walking near the road."* Q sort 7203 agreed, stating that continuous roadwork and lack of walking paths made it almost impossible to take up walking as regular exercise in Qatar. Q sort 7197 added: *"Most residential parts are very congested, resulting in less public spaces for walking."* Q sort 7200, Q sort 7338 and Q sort 7199 made similar comments on the infrastructure of the city and the traffic habits. Q sort 7328 commented that *"people in Qatar exercise only when their doctor advised them or as they become critically obese."*

Qatar's very hot desert climate was another aspect cited by many participants as a core barrier to exercise. Q sort 7304 remarked that "*it was too hot to walk outdoors during Qatar's long summer but the air-conditioned malls were not a favorable walking environment either."* The gym memberships are costly so residents are discouraged from joining. Several participants criticised the cost of gym memberships in Qatar. Q sort 7210 commented: "*I have gone through many gyms, and many are very expensive",* while Q sort 7320 believed "*expensive*

gym subscriptions prevent people from exercising". Q sort 7317 added: *"Sports facilities like gymnasium and parks are limited and expensive."*

Environmental barriers and urban design impact on lifestyle choices have been also well reached and documented in the literature as valid factors that may affect habitual exercise (Frank & Engelke, 2001; Frank, Engelke & Schmid, 2003). However, there are many opportunities that can be explored in Qatar to overcome such barriers and provide a safer environment for the general public to enhance their healthy living via on going utilization of the many sports facilities across the country.

Another obstacle to adopting a healthier lifestyle mentioned by the participants of this theme was a lack of healthy food stores, combined with a rise in cheap fast food outlets and an abundance of fast food advertising. Q sort 7293 commented: "*Especially at busy schedule times, when people need to grab a meal on the go, people always end up eating fast food."* Q sort 7311 added: *"Fast food is easy, accessible and can be delivered."*

Some participants in the "too many barriers" theme blamed the poor quality of lifestyle-related communications and various healthcare awareness campaigns for failing to encourage more widespread lifestyle change within the Qatar community. Others in the group suggested that the availability of cheap service labor further encourage a sedentary lifestyle. Q sort 7200 commented: *"Housemaids, drivers, and servants are everywhere; such manpower is very cheap. People rely on them in every action."*

5.2.3 "Attitudes towards health promotion campaigns"

While there have been a significant number of health awareness campaigns launched by healthcare providers in Qatar over the past 20 years, many healthcare consumers find such campaigns ineffective, confusing, non-resonant or lacking in influence. Several participants within this theme group

were of the opinion that Qatar-based healthcare awareness campaigns were not noticeable enough and, even in cases where they did attract consumer attention, these campaigns lacked the ability to motivate, engage or encourage lifestyle changes among Qatar's various communities. Q sort 7210 commented: *"I am not aware of any health campaigns, and I have been living in Qatar for a long time now. Maybe I did not give any attention to them."* Q sort 7327 mentioned that: *"I have noticed some health-related messages on roadside signs while driving, I didn't think that they are aimed at me!"*

Several consumers in this group stated that, in their opinion, healthcare awareness campaigns were communicated in the same manner as any other product's commercial, so they did not pay much attention to them. Q sort 7268 commented: "*Health-related messages needed to be presented in a different way to attract my attention."*

There was consensus among this theme that coordination and planning are the keys to successful campaigns. Q sort 7202 elaborated: *"To spread awareness of healthy lifestyles, we may need to start with well-planned and integrated public media campaigns. There are currently too many messages. I don't know what they mean and who puts them in public places."* Q sort 7196 noted: "*There were many small health promotion campaigns that took place, but their impact remained limited."*

Members of this theme highlighted the point that there is some disconnect between health entities and the public. Q sort 7248 commented: *"The disconnect is obvious between health institutions, decision makers and the general public, particularly the younger generation. Innovative awareness methods are not adopted and the campaigns are so badly done."* Q sort 7330 agreed: "*Communication between healthcare institutions and the community is weak in Qatar."*

Many participants in this theme expressed a belief that health campaigns were generally ineffective because they were poorly targeted, were non-engaging or were not followed through. Q sort 7304 pointed to the '*Kulluna*' campaign as an example, claiming health decision makers involved with the campaign "*should ensure more activities were carried out inside communities and closer to the people and above all they should inform the public that such activities are taking place"*. Q sort 7304 also added: *"Campaigns should be designed to engage people at all levels and nationalities. Health campaigns should target both the expatriates and Qatari people."* Q sort 7319 was also critical of the '*Kulluna*' campaign, claiming that *"The Kulluna campaign has failed to make an impact as it was not communicated effectively. A thorough follow-up of health campaigns is very important."*

5.2.4 "Closing the gap through intervention, community engagement and better targeting"

In line with the commonly held opinion among consumers that healthcare awareness campaigns in Qatar tended to be ineffective, participants did not shy away from giving their personal opinions about possible solutions to close the gap and to enhance the impact of future health campaigns.

Participants in this theme cited targeting children and young people as an integral strategy. Q sort 7352 remarked: *"Teaching children basic health information and healthy practices in schools from an early age, and creating a core and daily health subject in all schools, will ensure that we will have healthy lifestyle practices across society in the future".*

Indeed, it has been documented in the literature that school health education helps people choose healthier lifestyles by improving their knowledge of the relationship between health behaviours and health outcomes (Kenkel, 1991).

Many participants agreed that adults had the responsibility to lead by example. Q sort 7271 commented: *"The younger generation is learning bad habits from adults. As the older generations have some bad health habits, the younger generation will learn from them."* Similarly, Q sort 7306 pointed out that *"adults needed to be role models for younger people in terms of following good and healthy lifestyle behaviour."*

Healthy lifestyle education at schools was seen as highly important by participants in this theme. The educational and health authorities were seen to have a major impact and an important role to play in shifting the younger generation to adopt healthier lifestyle habits. Some believed that education and health entities should enforce the introduction of healthy food in school canteens as well as regular exercise for all children from an early age. Q sort 7327 remarked: *"Many school canteens need to be properly monitored by authorities and health organisations to ensure that they are selling healthy food to kids. Looking to the theoretical knowledge about health and lifestyle alone is not effective - they need to engage and encourage daily practice, too."* Q sort 7203 elaborated: *"I think health awareness and education should begin at nursery and primary school and that parents must ensure they are monitoring their children's lunchboxes and general food intake, not leaving this to maids and nannies."* Q sort 7245 agreed: "*Parents must monitor what their children eat when left with nannies all day, it's the parent's responsibility after all."*

The abundance of packaged and unhealthy food in schools was cited by several participants as a major contributor to obesity and unhealthy lifestyles. Q sort 7311 commented: *"Accessibility to cheap, packaged or fast food is the main reason why children are eating unhealthily. Many of them are obese these days. They need to be educated to choose better from a very young age."* Health promotion literature has extensively documented the central role of schools in health education, helping people to choose healthier lifestyles by improving their

knowledge of the relationship between health behaviours and health outcomes (Kenkel, 1991; Connell, Turner & Mason, 1985; World Health Organization, 1997; Deschesnes, Martin & Jomphe Hill, 2003; Peters et al., 2009).

Several participants in this theme suggested that campaigns need to be better targeted to be effective and less confusing. A 'one size fits all' approach was not considered good enough, in light of Qatar's diverse communities. Participants urged health bodies to pay more attention to audience age, as well as the timing of campaigns, when campaigns were designed and delivered. Q sort 7320 stated: *"I see health messages everywhere, but am not sure if they are meant for me. They seem to be aimed at locals judging from the pictures."* Q sort 7326 commented: *"My friend told me about a new health ad on the radio, but I don't listen to the radio at the time of day the ad is usually on."*

Several participants raised the point that more campaigns should target mothers specifically. Q sort 7342 remarked: *"There should be campaigns targeting mothers, and others targeting children in schools, and others targeting women at a young age."* Q sort 7207 commented that campaigns targeting young women and mothers were especially needed, while Q sort 7290 added: *"As mothers can influence children about the healthy food they should eat, we need to target mothers."*

Some participants suggested tailoring health promotion campaigns to target older people, tapping into their position as role models for younger generations. They also suggested that health authorities should design campaigns specifically for the corporate sector.

While the targeting and timing of health awareness campaigns were seen as important, participants also called for health messages to be made clearer and kept simple, so that the benefits of adopting recommended practices

could be immediately understood in order to enhance understanding and reduce some of the existing confusion.

Participants in this theme agreed that health information needed to come from well trusted sources, so they could feel confident that it was accurate. Q sort 7198 stated: "*I need to feel that whoever is lecturing me about healthy lifestyles is a real professional person in the field, so I can believe and follow. I need a trusted source of information."*

Some participants were of the opinion that community engagement and the presence of health professionals in various community settings were more convincing ways to deliver health information than via the mass media. Q sort 7306 commented: *"Correct and honest information should be given to the public, but not by advertising in streets, face-to-face delivery of information is important"*, while Q sort 7212 remarked: *"Health professionals need to be more active in the community to provide added value."*

Meanwhile, other participants commented that health campaigns in Qatar tended to be short and easily forgotten. They supported extending campaigns through continuous community engagement and follow-up. Q sort 7319 remarked: *"A thorough follow-up of health campaigns is very important, especially in a community environment."*

Some participants highlighted the fact that Qatar was in need of more skilled communication professionals who understood health issues in the context of community engagement, in order to close the current disconnect between health authorities and the public. Q sort 7246 observed: "*We need expert health people who understand how to communicate to all the diverse public."* Q sort 7246 elaborated: *"Health awareness exercises should be done by health professionals of different cultures who understand specific cultures and how to influence people from each cultural category."*

Several participants suggested that the local Qatari community is culturally closed and, as a result, not easily influenced by public health campaigns that are aimed at the general public. This does not mean that health campaigns were doomed to fail, but that health authorities had to rethink their approach and design more targeted intervention strategies to suit diversified audiences. Q sort 7303 commented: "*It's not hard to encourage better and healthier lifestyles amongst the Qatari culture."* Q sort 7293 added: *"I think the best way to reach the local community is via members of the local community and specifically targeted campaigns that takes into consideration their culture."*

Within this theme, some participants shared a belief that research would enable better

targeted solutions to existing lifestyle problems. Participants pointed to the need for research into and profiling of various communities within Qatar, coupled with effective measurement of previous and existing communication campaigns, to provide a better base for future campaigns. Q sort 7342 commented that: "*Health campaigns need to be measured, as I don't think they give us value."* Q sort 7202 added: "*To spread awareness of healthy lifestyles, they need to start with well-researched and well-planned integrated public media campaigns"* Similarly, Q sort 7199 and Q sort 7248 each pointed out that "*research could lead to ideas for new and innovative ways of communication".*

Participants in this theme were divided in their opinions on most effective mediums for delivery of health communication to the general public. Q sort 7338 stated that "*TV and social media were the best mediums, because they were popular across all age groups"*. However, Q sort 7316 preferred *"email, newsletter and radio"*, while Q sort 7330 was an advocate of "*Twitter, is the best way for me to receive information about health"*. Most participants in this

category believed that *"television is an obvious and effective medium of communicating health promotion and healthy lifestyle messages".*

Many participants within the "closing the gap" theme were keen to see the government play a more pro-active role in encouraging communities to adopt healthier lifestyles, specifically by subsidising the cost of fresh food and vegetables to consumers. In this way, government would make it easier as well as affordable for people to make dietary changes. Q sort 7258 and Q sort 7212 both supported *"government subsidies as a way to encourage people to adopt a healthier lifestyle",* while Q sort 7207 suggested "*an increase in healthy food outlets in Qatar"*.

Meanwhile, some participants called for further research and data gathering on the rising trend of obesity in Qatar so that authorities could be more effective when making decisions about the content and delivery of future health awareness programs. Q sort 7293 stated: *"Health departments should establish research programs and yearly surveys to find out why people are making unhealthy lifestyle choices and why obesity is increasing amongst the younger generation."*

Health consumers in this theme called for the facilitation of more community sports as well as the better use of sports facilities in Qatar to encourage more physical activity across the various communities and age groups. Some of the responses indicated a lack of awareness of existing facilities and their accessibility to the public. Q sort 7211 commented: *"I would be interested in registering for sports activities in Qatar, but there did not seem to be much available for average people."* Others expanded on this topic as. Q sort 7326 added: "*Sports events are not widely advertised, and if they were I would be interested."* Q sort 7271 stated: *"I usually hear about events in the newspaper the next day - they never reach me in time."*

Some participants commented that understanding the value of a behaviour, and having the will to change it, was the key that could bring about a major shift in people so they would become more open to healthy lifestyles. Q sort 7323 remarked: "*Health promotion should create the willingness to change first. Without emphasising the value of adopting more active and healthy lifestyle choices first, campaigns alone can make little or no difference.*"

Among this theme group, there was general agreement that, in order for health promotion to be convincing, messages must be presented in an easily understood manner and be delivered to the right people in a timely way, through the most appropriate delivery medium. Q sort 7352 commented: "*I will not adopt any health promotion suggestion unless I am convinced health promotion needs to be convincing and well communicated, illustrated in pictures and simple language.*"

Participants suggested that authorities need to address the communication gap between them and the general public to create more effective health awareness campaigns in the future. Consumers indicated that the mass communication style campaigns that have been tried in the past are not suited to an increasingly diversified Qatari community. Q sort 7323 commented: *"I don't think health promotion is reaching people; authorities need to understand why what they do now is not effective and change it."*

The general feedback from healthcare consumers indicated that previous health campaigns were not effective in delivering health messages to the intended audiences. The feedback from healthcare consumers also suggested ways to improve future campaigns that should be taken into consideration in future planning. Research indicates that the successes and failures of previous campaigns can be very useful in teaching important lessons and in indicating what could work in the future (Randolph & Viswanath, 2004). ■

Chapter 6

Conclusion

This chapter provides a brief description of the background of the study, followed by a summary of the main research findings and a statement of the implications, recommendations and limitations of this research. The chapter concludes with suggestions for future research.

6.1 Research background

This research is a modest step towards investigating health literacy in Qatar via health promotion. A key definition of health literacy is "the person's ability to understand basic health information and services needed to make appropriate healthcare related decisions" (Ratzan & Parker, 2000). Many other definitions have also been suggested and documented by researchers, government agencies, large organisations and programs. However, all these definitions share the common idea that health literacy involves the ability of individuals to understand information that helps them to maintain a positive, healthy lifestyle.

Health literacy has been conceptualised as one possible outcome of health promotion and health education. In chapter one, I noted that although health literacy achieved through health promotion has been researched comprehensively in Western countries, it has been poorly researched in Qatar. There is also very little scholarly literature on healthcare consumers' knowledge, attitudes and lifestyle health practices to guide healthcare providers to design a well-balanced national health promotional strategy and programs as a way in building and enhancing health literacy levels amongst the population.

This research has explored two sets of opinions and attitudes in relation to health literacy and healthcare promotion in Qatar:

1. The opinions and attitudes of healthcare providers about how to encourage better health literacy through health campaigns, and the resources required to develop health literacy further. The research also explored how the health system can work with government and non-government bodies, researchers, the education system and consumers towards a more health literate society.
2. The opinions and attitudes of healthcare consumers about local health awareness campaigns, exploring whether they are influenced and feel motivated to change their behaviours as a result of these campaigns. The study investigated consumers' views about the barriers they perceive as preventing them from adopting the healthy behaviours advised by local health promotion campaigns.

6.2 Summary of research design

As outlined in chapter one, this research adopted Q Methodology (Brown, 1980) to answer the research questions. Q Methodology was used to gather and analyse data from healthcare providers and consumers in order to study opinions on health literacy via healthcare promotion in Qatar. Healthcare providers from the private and public sectors, as well as healthcare policy makers, were selected to complete the provider Q sorts, while healthcare consumers from a range of nationalities, social and economic backgrounds were selected to complete the consumer Q sorts.

The analysis of the Q sorts resulted in five factors for each study group. The five factors from the healthcare providers' group revealed three distinct attitudes, while the five factors from the healthcare consumers revealed four distinct attitudes.

6.3 Main contributions and recommendations

The research highlights several contributions from healthcare providers and consumers.

6.3.1 Healthcare providers' contributions

The study uncovered a diversity of opinions from the providers' perspective. This diversity concerned not only what the term health literacy actually meant, but also the level of perceived lack of health literacy amongst the population and participants' views on health promotional programs and proposed strategies for change. However, the research has highlighted some common views, summarised in the following paragraphs.

Healthcare providers agreed that there needed to be consensus on a national definition of health literacy. It was suggested that by having a clear and common understanding of what the term meant, healthcare providers will be in a better position to design and deliver more targeted public health promotion and education campaigns to address existing health literacy gaps.

The results of the study suggests that the absence of a clear definition of the term amongst healthcare providers, coupled with the lack of base data on health literacy levels amongst the various communities in Qatar contributed to the problem of health promotion messages failing to reach the intended audience. This has resulted in somewhat weak and disconnected campaigns that have failed to bridge the knowledge gap or sufficiently create a call to action.

This research highlights that public healthcare promotional efforts need to be improved, and that some providers in both the public and private sectors recognise the need for change in the way campaigns are targeted. There is a widely held view that the key to sustainable and positive change in the delivery of future promotional efforts is to ensure better coordination

amongst healthcare providers, various private and public entities that disseminate health messages to the community. The research has also highlighted the importance of the role of community engagement in delivering successful and sustainable messages. The research highlighted that future lifestyle and health education campaigns should be coordinated amongst various entities, but overseen by an umbrella body such as the Supreme Council of Health (currently renamed as The Ministry of Health).

Some providers believe that campaigns should be designed and targeted to specific groups in society, as a 'one size fits all' method is unlikely to be effective. Providers also suggested that tapping into the unique Qatari culture to design and deliver campaigns with a better cultural fit to the national segment of society would be a good way to influence lifestyle choices — for example, exploiting the communal nature of the traditional *majlis* gatherings to provide lifestyle information and advice.

A focus on empowerment and motivation has also been suggested by some providers as one direction for future health campaigns. Launching campaigns that empower people to take control of their lifestyle choices was considered more effective than a paternal approach, providing that initiatives were well planned, well targeted and well executed. Providers may need to rethink their plans on the content and delivery of promotional efforts accordingly. This may require the adaptation of a strategy on lifestyle profiling for various communities to understand the best way to reach target groups.

Other providers indicated that there was a shortage of healthcare communication and planning expertise in Qatar, which has contributed to the poor quality of some campaigns. Public health campaigns in Qatar were described by some providers as confusing, short-lived and, in many cases, reactive rather than proactive.

Although there was general agreement that funding was readily available to support health education efforts, providers called for better planning, targeting and delivery of long-term public health campaigns by professionals in the field. Responses also highlighted the suggestion that contrary to the current practice, those who approve budget spending need to have the knowledge of the overall impact of planned long-term campaigns and an understanding of the importance of their continuation.

The providers stressed that health literacy and lifestyle education should start from a very young age. The role of the family, especially mothers, in delivering health education and health lifestyle practices at home was stressed, along with the important role of schools in the health education process.

The research has highlighted the important role of community engagement in the Qatari setting, confirming that health promotion and other health communication efforts should focus on developing and delivering community engagement educational programs. Providers need to develop campaigns based on a combination of research and collaboration, working with various health stakeholders, including consumer groups, in order to deliver successful and effective campaigns outcomes.

It has been suggested that building a national repository of knowledge based on measurements of health promotion campaigns, and developing guidelines for its access and ongoing updates, could be beneficial. Such a repository, if shared among various health entities, could align promotional efforts and, most importantly, gauge health literacy levels amongst the various community groups.

Providers also raised concerns about the need for better utilization of sports facilities, better regulation of health information to the public in terms of quality and accuracy, controls on fast food advertising, an increase in

healthy food outlets and more informative food labelling. Some also stressed the importance of government initiatives and enforcement of related laws that support healthy living and public safety. Providers raised these issues in the context of contributing to a more health literate society and supporting existing efforts by healthcare entities.

Making Qatar's sports facilities more accessible to wider sections of the general population would also enhance healthcare providers' efforts to develop public health campaigns with an increased community engagement element. By utilising sports facilities, providers could design and deliver community outreach programs that incorporate physical activities and lifestyle education in appropriate settings. Another suggestion was the development of a lifestyle centre, and a related hotline, to provide health and lifestyle advice to the community, staffed by experts on diet and exercise.

6.3.2 Healthcare consumers' contributions

The research into health consumers' opinions has indicated a strong groundswell of support for the concept of individuals taking charge of their own health, with support by way of readily accessible information and expert advice from health bodies. Consumers stressed the importance of the role of health entities to assist members of the community to gain a better understanding of the value of certain behaviours, so they would be more likely to adopt those behaviours. Consumers also agreed that people were more likely to listen and adopt health advice if it could be shown to originate from a respected and well-trusted source.

The research indicated that many consumers were unaware of recent health promotion campaigns. If they were aware at all, they believed that these campaigns were either poorly targeted, were not motivating or failed to engage the attention of their intended audience. Consumers also indicated

that the messages of some campaigns were not clear, and that they were confused and unsure whether the campaign was aimed at them.

The research indicated that consumers were not generally motivated by current health campaigns; in fact, some were not aware of any health campaigns taking place during the time this research was conducted. However, consumers suggested that they would react positively to simple health-related messages from a trusted source, received in a timely manner.

Consumers pointed out that the communities in the country were quite diverse, and that health messages should acknowledge this diversity and be delivered in ways that reflect it. They believe research into customers' needs and social make-up is important to facilitate more effective campaigns. Campaigns need to be delivered with the right message to the right community via the right medium and at the right time.

Some consumers did not believe that mass communication was an effective method of disseminating health and lifestyle-related information, as it failed to deliver the messages or even cross their radar. Other consumers did not associate mass media and street advertising with lifestyle and health messages. In addition, some consumers mentioned that information about health events and activities in Qatar usually reached them after the event or activity had taken place, indicating that the wrong delivery medium may have been used to reach potentially interested sectors of the community.

On perceived barriers to habitual daily exercise, consumers most commonly cited lack of appropriate infrastructure and the hot climate in Qatar. Some suggested building indoor walking facilities and tracks in a bid to overcome these problems.

Other barriers mentioned by consumers included difficulty navigating around Qatar's busy roads while on foot, the lack of healthy food outlets, the

high cost of fruit and vegetables, the lack of access to free sports facilities, and high gym subscription prices.

6.3.3 Common ground — providers and consumers

The research indicated that the consumers group was in agreement with the providers group on a number of important concepts:

- Healthy lifestyle education should start from a very young age, both at school and within the family. Consumers raised the additional points that school canteens needed to be monitored by government authorities; children should not be surrounded by fast food advertising; and sports and habitual daily exercises needed to be strongly encouraged by home and school. The knowledge to find, process and use information related to health and wellbeing needed to be incorporated within school curriculums when and as appropriate. This implies that the learning focus should be on how to acquire health-related knowledge, rather than on what knowledge to acquire.
- Health campaigns needed to be based on solid research in order to be better targeted and to succeed in building awareness or changing behaviour.
- Taking personal responsibility for one's health was important, and campaigns should therefore be designed to motivate and encourage personal responsibility for healthy lifestyle choices. Health entities, schools and the wider community needed to work towards providing an environment in which this personal responsibility could be nurtured in individuals from an early age.
- Community engagement is an effective way to deliver health promotion campaigns directly and in a timely manner.

- Government support, in terms of health policies and enforcement, is needed to support providers' communication efforts and consumers' adaptation to better and healthier habits. For example, respondents suggested that government should initiate policies across a range of lifestyle-related areas, such as the facilitation of the development of healthy food outlets, regulation of fast food advertising and the enforcement of laws related to smoking.
- Most health promotion campaigns to date have had a limited influence on community awareness levels and/or behavioural change.
- Coordination efforts are needed between the various government entities to overcome some of the barriers to exercise that have been emphasised in this research, such as public access to sports facilities and the cost of gym subscriptions, among others.
- Health communication should target families, schools, organisations and various communities as well as individuals. The responsibility of health literacy must therefore be shared by all of these entities.

6.3.4 Challenges and recommendations

The scholarly literature reviewed in chapter two acknowledges the importance of health literacy in easing access to care and health services and in improving the individual's ability to care for his/her own chronic conditions and maintain general health and wellness. It is therefore envisaged that good health in a broader context of wellbeing has positive implications both economically and socially. The World Health Organization's declaration on health promotion (WHO, 1997) asserted that there is evidence to back up the claim that improved health literacy enables people to engage with healthcare providers more effectively and that access to information is an integral part of empowering individuals and

communities to safeguard their health. Under the declaration, the empowerment of individuals and community capacity have been linked together as one of the five priorities for enhancing health outcomes in the 21st century

Low health literacy can affect people of all backgrounds and life stages. However, its consequences are worse for the elderly and the chronically ill. People with low health literacy tend to use more healthcare services and therefore increase the expense of providing services to all. Those with low health literacy are less able to deal with their chronic illnesses, have higher mortality rates, experience difficulties navigating the health system and are unlikely to use preventative care programs.

This imposes a significant burden on healthcare consumers and providers alike, and, at the same time, puts serious pressure on healthcare providers to come up with strategies to address such challenges.

This research indicates that some healthcare consumers in Qatar hold the view that it is the responsibility of healthcare providers to develop promotional and educational programs that can enrich their knowledge about health and wellbeing. In addition, some healthcare providers acknowledge a responsibility to provide such campaigns and programs.

The overwhelming message of this research is that there are some challenges that need to be addressed in relation to health promotion, health education and healthcare literacy. Below I list some of the main challenges identified from this study and suggest how these might be addressed.

1. The need to define health literacy in a Qatari context

The literature review shows that health literacy is becoming increasingly important for the economic, social and health development of any nation. The review also confirms that low health literacy is linked to a higher risk of

death and hospitalizations, as well as mounting pressures on the health system.

This research has highlighted some lack of awareness and knowledge, but mainly a lack of agreement, amongst healthcare providers on the scope and definition of the term 'health literacy'.

A good place to start in addressing some of the wider challenges highlighted by this research would be to agree on a national definition of the term.

I therefore suggest that health literacy be defined within a Qatari context. As the terms 'health' and 'literacy' concern professionals from across education and healthcare, I recommend that Qatar engages a multi-disciplinary team of providers and educators to work on a national definition of 'health literacy' and define its scope. The agreed definition should take into account the unique social, economic, and environmental forces that impact on the health and the wellbeing of this nation.

2. The need to develop baseline population data

The scholarly literature has emphasised the importance of gauging the levels of healthcare consumers' health literacy when planning and delivering promotional initiatives, in order to ensure that the messages delivered address a defined knowledge gap or target a certain behaviour.

In the absence of baseline data to benchmark community health literacy levels, any attempts to provide health promotional activities will continue to deliver isolated and unrelated messages, and will therefore most likely fail to address the intended purpose.

Therefore, I suggest that Qatar work on developing a set of indicators to quantify health literacy of its population and relate the data back to a set of health, social and economic outcomes. I also suggest that Qatar develop its

own health literacy index by using existing surveys developed by reputable organisations such as WHO, to be used as a benchmark to build future educational and promotional programs.

Until such data is collated and made available, I recommend as an interim step that healthcare providers shift the focus of promotional campaigns from disseminating isolated healthy lifestyle messages to campaigns that empower and motivate consumers to access health information and use it to enhance their health and wellbeing.

I also recommend the use of investigative tools, possibly psychometric instruments, to measure the health literacy levels of various communities. As it is important to not only create a common understanding of what the term 'health literate consumer' means within the Qatari context, but also to understand the extent of the problem. More base data is required, which can be gathered using readily available measurement tools such as the Rapid Estimate of Adult Literacy in Medicine (REALM) and the Test of Functional Health Literacy in Adults (TOFHLA) — both instruments that measure individual capacity to understand and use health related information to enhance lifestyle and maintain health (WHO, 2010).

3. ***The need to improve access to and availability of health information***

The literature has indicated that consumers are more likely to embrace preventative healthcare measures if they are able to conveniently access appropriate, reliable health information from a trusted source. If such information is made available in a relevant manner to different target groups, relating to specific consumer demands, then this could ease some of the pressure on the health system.

Consumers who took part in this research indicated that the availability of trusted, integrated and regulated health information was generally lacking.

Health information published in daily newspapers in Qatar is sometimes misleading, and the increasing use of the internet to self-diagnose health issues can prove problematic for consumers with low health literacy levels.

As a result of this study, I suggest that healthcare authorities may want to further regulate the health information provided to the public through the general media. Authorities could also consider developing a national health and lifestyle information database, using respected national and international sources, to further disseminate accurate and appropriate information to the general public. Improving people's access to health information and their capacity to use—i.e. improving people's health literacy—is critical to empowerment (Nutbeam, 1998:349-364).

4. ***The need to improve the standards of the health communications sector***

This research indicates that Qatar's healthcare communication experts do not fully understand the conceptualization of health literacy as an outcome of health education and promotion.

To foster health literacy in the wider community, Qatar needs to have healthcare communication experts who appreciate the long-term value of health literate consumers to the performance of the healthcare system.

This research indicates deficiencies in the healthcare communication sector within Qatar. The sector requires professionals who have the background and expertise to be able to recognise the various cultural attitudes, traditions and values of the diverse Qatari community, and who can communicate with members of the community in a manner that is culturally appropriate.

I recommend that those who provide the communication mix are highly qualified professionals in their field and, above all, health literate themselves.

In the quest to develop a more health literate community, we must not lose sight of the crucial need for appropriately health literate providers.

5. The value of developing a national action plan

While nutritional guides and physical activity routines are a regular part of the curriculum in most Qatari schools, this is not in itself sufficient to address unhealthy lifestyle practices among children. I recommend that health and educational authorities to work very closely together to address the existing curriculum challenges that prevent health literacy from becoming rooted within the education system. I suggest that the authorities in Qatar may also want to address and enhance existing health literacy skills amongst teachers and educators.

I strongly recommend that Qatar authorities work immediately on a large scale strategy that can facilitate the establishment of improved links between the education system and the public health system to promote health literacy in schools and other educational institutions. Such links could be extended to various organisations in the private sector to address adult health literacy.

The majority of the healthcare providers and consumers consulted in this research, strongly believed in the coordination of efforts and ongoing community engagement projects to address health education and promotion. It is, therefore, I suggest that Qatar considers a linked multi-sector effort to address health literacy via health promotion, education and community engagement programs. This could be done by developing a national action plan targeting healthcare consumers across the board. This would call for the involvement of a diverse variety of organisations, professionals, policy makers, communities, individuals and families, not only in the healthcare and education fields, but across the wider construct of Qatar society.

6. ***The importance of harnessing technology for better health care***

As is the case across the developed world, this research found that consumers aged in their twenties and thirties are highly technology savvy. Healthcare providers are highly likely to benefit from the integration and creative use of social media and mobile devices to empower younger generations to make healthy lifestyle choices.

Therefore, I recommend that a partnership on the use of broadband technology should be explored by the health authority and Qatar's leading telecommunications organisations. This partnership may provide the platform needed in order to deliver health promotional initiatives for the young and technologically literate segments of the population. I also recommend that healthcare providers work towards building sustainable community-based programs to appeal to people who are not frequent users of these technologies.

Appropriately managed, technology can be successfully leveraged as a potent communications tool that can contribute positively in the long-term to shifting the balance of health care investment towards preventative health and self-care.

6.4 Implications of the research

The core question that prompted this research was: "What can the Qatari experience of the effectiveness of health campaigns tell us about the relationship between such campaigns and health literacy?" The results highlight the complicated relationship between health literacy and health promotion, particularly in the framework of a rapidly developing country with a diverse population and an alarmingly rapid rise in the rate of lifestyle-related disease. It is clear at this stage that developing successful health campaigns that take into account Qatar's specific requirements and bridge health literacy gaps will require a high level of research.

The failure of past health campaigns to deliver a more health literate Qatar has been borne out by this research. This implies that attempts to achieve health literacy as an outcome of health promotion and health education have not been as successful as healthcare providers might have hoped.

This research indicates that there is a rather weak relationship between health literacy, health promotion and health education, and that healthcare providers are either struggling to address health literacy gaps within various communities or they lack the knowledge that such gaps do really exist.

The unprecedented expansion of healthcare facilities and institutions, changes in the delivery of care and mounting pressure on the existing healthcare system due to rising consumer demand will all increase the importance of developing a more health literate population.

Health literate consumers know how to navigate the healthcare system but, most importantly, they are empowered and motivated to take charge of their health and wellbeing and therefore contribute positively to healthcare outcomes. The strong connection between health literacy and health promotion and education, and its impact on health outcomes, is yet to be strongly recognised and acted on within the Qatari context.

Based on the above listed findings of this research, I strongly recommend that in order to create a health literate Qatar, educators and healthcare providers with the guidance and support from the leaderships of both sectors need to work together through the complexities of the problem and advise appropriate strategies accordingly.

6.5 Research limitations

This research draws on the opinions of adult providers and consumers from a range of nationalities, all of whom have a good command of spoken English.

A total of 48 healthcare providers and 52 healthcare consumers completed Q sorts for the two Q studies. These participant numbers were considered to be sufficient for carrying out Q studies (Brown, 1980; Van Excel & de Graaf, 2005; Watts & Stenner, 2005; 2012). Given the relatively small number of participants, however, it would be imprudent to claim that these opinions are a representation of the opinions of the whole of Qatar's healthcare provider or consumer population.

In spite of the fact that Qatar shares similar cultural, social and economic characteristics with other Gulf Cooperation Council countries, this study does not claim that the opinions of those who have participated can be generalised to reflect those in the neighboring Gulf States.

6.6 Directions for future research

There is limited literature on the topic of health literacy and health promotion in the State of Qatar. This research is the first scholarly study related to this topic in Qatar. Further exploration of these two interrelated topics is clearly warranted. Possible future lines of enquiry could include:

- Extending this investigation to explore the opinions of consumers and providers in other Gulf States on the same topic. A comparative study may establish if other Gulf States share similar problems and if similar bridging strategies would be applicable.
- Exploring how Qatar's specific demographics can be reflected in a national concept of health literacy, and the economic, social, cultural,

environmental and other determinates that can be put in place to use as indicators for measuring health literacy in Qatar.

- Investigating the impact of health literacy on healthcare outcomes in Qatar. What are the indicators that could be put in place? How can these indicators be implemented and measured?
- Investigating how to incorporate health education within school curriculums to promote personal empowerment and the idea of taking accountability for self-health. How can a link be established between the health system and the education system to facilitate this?
- Investigating the key indicators of a country with an advanced level of health literacy to determine which practices could be adapted to the local context.
- Examining how Qatar health organisations could promote organisational change to incorporate health literacy within their daily practices. What measures could be established to assess health literacy levels amongst healthcare providers and healthcare educators? Is it possible to develop an accurate measure that is practical and can be accepted and adopted by educators?

Qatar can learn from the experiences of other countries who are attempting to increase their levels of health literacy through health education and health promotion. In turn, Qatar may be able to provide a valuable insight into a health literacy approach within the Gulf region. ■

Appendices

Appendix 1

Non communicable diseases: mortality rates across high income countries

Proportional Mortality (% of total deaths, all ages)/ Country	CVDs	Cancers	Respiratory diseases	Diabetes	Other NCDs
Qatar	23	20	4	7	15
Australia	35	29	6	3	17
Canada	33	30	6	3	17
Denmark	31	30	7	2	19
France	30	31	4	2	20
Ireland	34	29	7	2	15
Japan	32	31	5	1	11
Kuwait	46	13	2	3	12
New Zealand	37	29	7	3	15
Norway	35	27	6	2	17
Oman	49	11	3	7	13
Singapore	33	30	4	3	9
United Arab Emirates	38	12	2	3	11
United Kingdom	34	27	8	1	18
United States of America	35	23	7	3	19

Source: World Health Organization, 2011. Non communicable Diseases: Country Profiles 2011. [pdf]
Available at <http://whqlibdoc.who.int/publications/2011/9789241502283_eng.pdf>

Appendix 2

Healthcare media statements

Statements	Newspaper	Date	Page
Before 3 months prior to planning pregnancy, diabetic women should start a healthy dieting plan	*Al Sharq*	1/20/2014	22
There is no one standard diet plan that suits all diabetes patients.	*The peninsula*	1/19/2014	5
Any healthy adult aged 18 and above can donate an average of 460 ml of blood during a typical donation.	*Qatar tribune*	1/19/2014	19
Blood donation and post-donation process normally takes 20 to 25 minutes.	*Qatar tribune*	1/19/2014	19
PET is powerful tool for diagnosing and determining the stages of many types of cancer.	*Qatar tribune*	1/19/2014	19
Not all patients with diabetes follow the same meal plan.	*Qatar tribune*	1/19/2014	19
The body needs 30 Calories for each kilogram of body weight.	*Qatar tribune*	1/19/2014	19
Fast food consumption is on the rise amongst children in Qatar	*Qatar tribune*	1/19/2014	19
Tests are held daily for doctors to check their competence. There are many training courses for the first-aid staff.	*Qatar tribune*	1/20/2014	1
International accreditation is a must for private hospitals	*Qatar tribune*	1/17/2014	1
long term patients, pediatric patients or simply patients recovering from surgery sometimes have to spend many hours at the hospital with no other pastime or leisure than watching TV or chatting up with their friends and family members. With such a limited activities, patients are likely to experience boredom and have slow healing progress.	*Gulf times*	1/21/2014	9
Art has been shown to contribute in decreasing stress lowering blood pressure and even reducing the need of pain medication.	*Gulf times*	1/21/2014	9
Major work is being undertaken at HMC to upgrade their hospital environment.	*Gulf times*	1/21/2014	9
Type 2 diabetics is on the rise in Qatar and could reach 500m by 2030	*The peninsula*	1/21/2014	2

Statements	Newspaper	Date	Page
PETscan is powerful tool for diagnosing and determining the stages of many types of cancer.	*Gulf times*	1/18/2014	2
In the spinal clinic now, a patient might only need to wait up to one week to see a specialist in the evening clinics, especially if the case was urgent. For the operating theater, the waiting time could be between one to three months.	*Gulf times*	1/20/2014	1
No birth registration at SCH hq from FEB 2	*Qatar tribune*	1/20/2014	1
HMC orthopedic dept. treats up to 8,000 patients a month	*Gulf times*	1/20/2014	7
Victims of road traffic accidents (RTAs) and fall from height still form the bulk of patients seen on daily basis at Hamad Medical Corporation's Orthopedic Department.	*Gulf times*	1/20/2014	7
Patients are mostly Young are frequently admitted to HMC emergency on regular based, many of those admitted are laborers aged 30 - 34 years old who usually suffer complex injuries due to fall from height or industrial accidents.	*Gulf times*	1/20/2014	7
difficult cases that required patient to travel to overseas hospitals are not performed at HMC due to the excellent care, specialised staff and the state of the art equipment available	*Gulf times*	1/20/2014	7
Women with diabetes should discuss their eating plan with their doctor	*Al Sharq*	1/20/2014	22
Following a healthy diet and exercise are important pillars for the treatment of gestational diabetes	*Al Sharq*	1/20/2014	22
It is important to control the level of sugar in the blood to avoid maternal and fetal complications	*Al Sharq*	1/20/2014	22
SCH is preparing for the launch of a database on diseases and infertility problems, pregnancy and childbearing in Qatar	*Al Sharq*	1/20/2014	23
The disease, Type II diabetes is a major problem for the State of Qatar	*Al arab*	1/21/2014	13
Enhancing the skills of medical staff in the areas of proper storage and handling of vaccines is a priority for the SCH	*Al Sharq*	1/21/2014	17
Qatar vision is to achieve excellence in medical care services	*Al arab*	1/22/2014	9
Diagnostic errors threaten the lives of Hamad Hospital patients	*Al Raya*	1/16/2014	1

Statements	Newspaper	Date	Page
Lack of experience behind the delay in treatment and the difficulty of early detection of diseases	*Al Raya*	1/16/2014	1
Diagnostic errors reveal the weakness of medical staff	*Al Raya*	1/16/2014	20
Following healthy diet is important before pregnancy as well as during pregnancy	*Al Raya*	1/16/2014	20
D. Hajri: medical consultation with your doctor is very important before traveling	*Al Watan*	1/23/2014	8
D. Rumaihi: consult your family doctor before you travel at least 4 weeks	*Al Watan*	1/23/2014	8
D. Khalif: 9 smoking-related cancers	*Al Watan*	1/23/2014	5
D. Shushan: 90% cure breast cancer if it is detected early	*Al Watan*	1/23/2014	5
5,075 visit pediatric clinics recorded in 2013	*The peninsula*	1/23/2014	4
non-invasive diabetes test could be possible soon in Qatar	*The peninsula*	1/23/2014	2
Immunotherapy to be implemented in Qatar	*Qatar tribune*	1/23/2014	18
Early detection will cure 60% of cancer cases	*Al Raya*	1/23/2014	14
Early detection of cancer can save life	*Al Raya*	1/23/2014	14
The discovery of safe and low side effects of cancer treatments is possible within 5 years	*Al Raya*	1/23/2014	14
It is important to diagnose patients who have diabetes early so that they can receive treatment	*Qatar tribune*	1/23/2014	1
The main premise of cancer immunotherapy is stimulating the patient's immune system to attack the malignant tumor cells responsible for the disease	*Gulf times*	1/23/2014	1
Medical test can detect early diabetes	*Al Arab*	1/23/2014	1
HMC Appeals for people to register as organ donors	*Gulf times*	1/26/2014	11

Statements	Newspaper	Date	Page
Discovery of Genes in Qatari Women to help treat breast cancer early	*Qatar tribune*	1/26/2014	1
High rates of consanguinity in Qatar population may be responsible for the high rates of breast cancer among women in Qatar.	*Qatar tribune*	1/26/2014	1
The earliest breast cancer is defeated, the higher the treatment chances will be. Through early genetic analysis of women at high risk of breast cancer.	*Qatar tribune*	1/26/2014	1
There are a number of therapies involved in breast cancer treatment including surgery, chemotherapy, radiation and now immunotherapy.	*Qatar tribune*	1/26/2014	1
Patients' rights to be first priority in all our hospitals	*The peninsula*	1/26/2014	1
following healthy diet and exercise is important to all family members	*The peninsula*	1/26/2014	1
Health authorities are keen to spread awareness about healthy lifestyles through a variety of programs and activities that target all segments of society.	*Qatar tribune*	1/26/2014	4

Appendix 3

Healthcare providers group: completed Q sorts table

Code	Q Sorts	Date
007190**XxTm** ***ID: 7496***	-1,0,2,0,-2,0,4,-2,-2,5,-3,2,-4,-1,3,4,1,2,1,0,-2,-3,1,-3,-5,0,-1, 2,1,2,0,-1,0,1,2,3,3,5,0,-1,-5,-1,3,-2,-1,-2,-4,1,4,0,1,-3,-4	05/19/2014
007193jrzX ***ID: 7500***	1,-2,-5,-3,-4,-1,1,-3,-2,0,4,2,-1,-1,-4,0,1,5,0,2,-1,5,1,2,2,1,3, 3,-1,0,-3,-2,0,-4,0,3,4,1,-2,-1,-3,2,1,-1,-2,4,-2,0,0,0,-5,2,3	05/19/2014
007213adBW ***ID: 7503***	2,-1,3,-1,-1,0,-2,-3,0,-3,0,0,-1,3,1,5,-3,-4,1,1,-4,4,-2,-5,1,-2,1, -1,0,1,0,2,2,-4,4,0,3,-2,2,3,-5,1,5,-2,-2,2,-3,-1,0,2,4,0,-1	05/20/2014
007214cqoh ***ID: 7505***	1,-2,3,-2,0,-1,-2,-4,-1,1,5,-3,3,1,-4,1,3,1,-3,2,-3,-5,2,2,-1,2,5, 4,-2,4,4,2,0,-2,-1,2,1,0,-1,-5,0,3,0,0,1,-1,-4,-2,0,-3,-1,0,0	05/20/2014
007206yBZz ***ID: 7510***	-1,-3,3,4,-4,0,0,-3,0,0,-2,-1,-4,-4,5,3,-3,0,-1,3,-1,1,3,2,0,-2,2, 2,-2,1,-2,-5,1,-1,1,2,1,-5,4,5,-1,1,0,0,4,2,-1,0,1,-2,-2,-3,2	05/21/2014
007217IlAF ***ID: 7512***	-5,-1,-5,2,-1,4,-2,-2,4,2,-1,1,-4,3,-1,2,3,2,-3,-4,0,3,0,4,0,5,1, 3,0,2,-3,0,2,0,1,5,1,1,0,0,-4,1,-2,-2,-2,1,-2,-1,-1,-3,-3,-1,0	05/21/2014
007227ZGKb ***ID: 7517***	-4,0,-1,0,4,3,-3,-2,0,1,-1,-2,0,2,-2,0,-4,1,2,-1,4,-5,0,1,2,1,3, 2,0,0,-3,5,3,-2,-1,-1,3,1,4,1,5,2,-1,-1,-2,1,-3,-5,2,-4,-2,-3,0	05/22/2014
007195vsOY ***ID: 7519***	1,-1,2,-2,0,-3,4,-4,-1,-1,-5,0,2,1,-1,4,3,1,-2,1,3,-2,3,5,-2,3,2, 5,0,0,-3,-2,2,-3,4,2,1,0,-5,-4,-4,0,-2,0,1,1,-1,-1,-3,0,0,2,-1	05/22/2014
007215EPyB ***ID: 7520***	0,4,-3,-2,3,1,-1,-4,-2,-1,0,0,-1,1,-2,1,-1,2,-2,5,-2,-4,-1,-3,- 1,2,1, 3,-2,2,0,4,3,2,2,-1,3,-3,0,2,-5,4,0,0,1,1,0,-3,0,1,5,-4,-5	05/22/2014
007189Jlvh ***ID: 7530***	-4,0,-3,0,2,-2,3,-5,-2,2,2,-1,-2,1,1,4,-2,2,-1,2,0,-3,1,1,-1,-2,5, 4,0,-3,-3,3,0,-4,1,3,4,5,2,-1,3,-2,-4,-1,0,1,-5,1,-1,0,0,-1,0	05/26/2014
007244SHzE ***ID: 7531***	3,-5,2,-4,-1,0,0,-2,-2,-1,-1,4,0,3,-3,2,0,5,-4,4,-3,-1,0,0,-1,0,4, 2,3,2,-2,5,1,-3,1,1,2,2,1,-2,0,0,1,-2,-4,1,-1,1,-5,-1,-3,-2,3	05/26/2014
007247XDQu ***ID: 7535***	-1,0,-3,0,-2,-4,-1,0,1,-4,-2,1,-2,2,-3,3,2,-2,0,4,-1,-2,1,-2,1,-4,2, 3,3,-1,2,-1,1,0,4,5,1,0,2,-3,-5,5,2,4,-1,3,-5,1,-1,0,0,0,-3	05/26/2014
007241gLln ***ID: 7537***	1,-1,0,5,-5,-2,0,-5,0,-3,-2,2,2,0,0,1,1,-1,-2,3,-3,-1,-2,0,2,3,1, 2,3,4,4,-1,1,0,3,5,1,0,1,-2,-1,-1,-4,-1,4,2,0,-2,-4,-3,2,-3,-4	05/26/2014
007233FXzy ***ID: 7543***	-5,-3,2,1,0,-3,0,0,-2,0,2,0,2,4,-1,1,0,3,-1,-4,0,3,-2,4,3,-2,-4, 5,0,2,2,1,5,3,4,1,2,1,-4,0,-3,-2,-2,-5,-1,1,-1,-1,1,-1,-3,-1,-2	05/27/2014
007251VnBo ***ID: 7554***	5,-3,3,0,-1,0,-1,-2,1,-4,-2,2,2,3,-1,4,3,2,0,1,0,-4,0,-2,-3,2,1, 4,-2,-1,2,-3,4,-3,3,1,1,5,-2,-5,0,1,1,0,-5,2,-1,-1,-2,-1,0,-4,0	05/31/2014

Code	Q Sorts	Date
007226LKoo ***ID: 7555***	-2,-5,4,0,4,2,-4,-2,0,1,-2,3,1,0,0,5,2,1,-2,2,1,-1,4,-1,1,0,1, 3,-3,2,3,0,-3,0,2,3,2,5,-1,0,-1,1,-5,-4,-1,-1,-2,-4,0,-2,-3,-3,-1	05/31/2014
007267Iqsn ***ID: 7556***	0,0,-1,4,1,4,-3,-5,-3,-4,-2,-2,2,3,-2,1,-2,2,-3,-2,1,-3,-2,0,5,1,3, -1,-1,2,3,1,4,3,2,2,1,5,-4,-4,2,0,-1,0,0,1,-1,0,-5,0,-1,-1,0	06/01/2014
007250JzCA ***ID: 7559***	-1,0,5,0,-5,0,1,0,-3,-2,2,-1,1,3,2,1,-1,-1,2,3,0,-4,2,-1,-2,-1,5, 3,0,4,0,1,-3,-5,-4,3,-2,-2,2,2,-3,-2,4,4,1,-1,-4,0,1,-2,1,0,-3	06/02/2014
007265vRnD ***ID: 7562***	-1,-4,-3,0,2,0,-2,0,-2,2,1,-4,-1,1,1,1,-1,-1,0,3,-4,-3,5,-2,4,2,3, 1,-3,-2,4,5,2,0,1,3,-5,2,2,-1,4,0,3,-1,1,0,-2,-1,-5,0,-3,0,-2	06/02/2014
007194ylLM ***ID: 7566***	2,0,3,0,0,-2,-3,-4,1,-1,2,5,-5,4,-2,4,1,-2,-2,1,1,0,-1,-5,2,2,1, 1,-1,2,-1,0,-3,-4,4,3,3,-2,-1,0,-4,3,2,0,5,1,-3,0,-3,-1,-1,0,-2	06/04/2014
007272hyls ***ID: 7573***	1,0,-1,0,1,-2,-2,-3,-2,-5,0,3,-2,4,-2,5,1,2,-1,-4,-5,-4,2,-2,0,3,2, -1,1,3,0,-1,4,-1,5,1,-1,3,-4,-3,-3,2,1,-1,2,4,0,0,-3,0,0,1,2	06/07/2014
007274eCpy ***ID: 7574***	5,0,-1,-1,1,1,0,0,1,2,3,2,-4,2,-3,1,3,2,-1,-1,0,-2,3,0,-2,5,1, -2,0,-1,2,-1,4,-2,1,-3,-4,-2,-1,3,-3,4,-2,0,-3,4,-5,0,-4,-5,0,2,1	06/07/2014
007285gsIP ***ID: 7575***	-3,-4,1,0,-5,-3,0,-4,3,-1,4,1,2,-1,0,5,-2,1,-2,1,-1,-1,-1,-2,4,1,5, -1,0,1,-2,2,3,3,1,2,0,-2,4,-2,-4,2,2,0,0,3,-5,0,-1,-3,-3,0,2	06/08/2014
007281jZbU ***ID: 7577***	1,-2,4,0,-3,-1,-2,-5,-4,-1,-4,1,-2,1,-2,3,-1,4,0,3,0,-5,-2,-1,0,1,5, 1,0,3,3,2,2,-3,0,1,5,-1,1,-3,-4,0,-2,2,-3,4,-1,2,-1,0,2,0,2	06/08/2014
007282qGLP ***ID: 7578***	0,-2,-4,-1,2,3,0,0,1,4,-1,1,-1,0,3,1,2,-5,-1,-3,0,0,3,-3,-2,4,0, 2,-2,-4,-4,4,5,2,5,1,3,2,1,-2,-2,1,-5,-1,1,2,0,0,-3,-1,-2,-1,-3	06/08/2014
007232tVae ***ID: 7580***	-4,-2,2,1,0,-1,0,0,2,1,-1,-4,-2,3,0,2,0,-2,-1,-2,1,-3,0,0,-1,3,0, 3,1,0,2,1,1,2,5,1,3,5,4,4,-4,-1,-2,-1,4,2,-5,-3,-3,-2,-5,-1,-3	06/09/2014
007269MOYc ***ID: 7582***	-4,-1,-1,0,-5,5,-1,-4,0,3,-3,0,-2,3,-3,3,4,3,1,2,0,-1,-4,2,0,1,4, 1,-5,1,-1,1,-1,-2,2,2,2,1,1,-3,0,5,-2,0,4,2,0,0,-1,-2,-2,-3,-2	06/09/2014
007283QgAN ***ID: 7587***	0,0,1,-1,-3,0,-1,-2,0,0,-3,2,-4,1,5,3,-2,-3,-5,2,0,-5,4,1,3,1,1, -4,5,2,-4,4,2,0,-2,-1,1,3,4,2,-1,-1,3,1,-3,2,-2,-2,0,-2,0,-1,-1	06/10/2014
007296tryp ***ID: 7588***	3,1,1,-2,-4,-2,0,-5,-4,-3,-1,0,0,5,-2,1,1,0,-2,-1,-3,-4,0,-5,-2,4,4, 3,1,0,-1,-3,-2,0,2,3,2,-1,2,1,-1,4,3,0,5,-1,-1,2,-3,2,0,2,1	06/11/2014
007301CRqK ***ID: 7592***	-1,-1,0,-2,-3,-1,1,2,-1,-1,0,4,5,3,-2,0,3,4,1,5,1,-4,-2,0,-3,0,1, 0,2,-2,-1,-2,3,-1,3,0,1,0,1,-2,4,1,-5,2,2,0,-4,2,-3,-5,-4,-3,2	06/12/2014
007228RoTw ***ID: 7596***	0,-4,4,4,-3,2,0,-1,5,0,2,-3,-1,2,0,0,0,5,1,-1,-5,-3,0,2,-2,-1,3, 3,-2,-2,-4,-1,1,-2,2,1,1,-2,0,3,2,4,1,-1,3,1,-4,0,1,-3,-5,-1,-2	06/13/2014
007276ekSs ***ID: 7600***	0,-4,4,0,0,-2,-3,-1,2,-2,-1,2,3,2,-1,3,3,5,-2,0,0,1,-2,-3,1,1,2, 1,0,2,1,0,1,-1,4,4,3,0,-3,-1,-3,2,-5,-1,1,5,-5,-2,-2,-4,0,-1,-4	06/15/2014

Code	Q Sorts	Date
007294lFcG ***ID: 7605***	4,0,1,-2,-4,0,2,0,-5,-2,-1,1,2,2,-5,5,-1,-3,0,3,-4,-1,1,-1,-2,2,3, 4,0,-2,5,1,-2,-4,-1,2,1,-2,4,1,-1,-3,-1,-3,3,2,1,0,3,0,0,0,-3	06/16/2014
007321eQMy ***ID: 7623***	-3,-2,5,-1,0,1,-2,-4,-1,0,0,-4,0,1,-2,2,-4,-1,4,2,-1,0,3,-5,0,2,2, 2,-3,4,1,1,0,-1,3,3,4,1,2,-2,-3,3,-5,1,0,5,-3,-2,-1,-1,1,0,-2	06/23/2014
007322NKxr ***ID: 7633***	-3,-4,3,0,-2,0,-1,-5,2,-2,5,4,1,3,-3,1,2,1,-2,0,-1,2,-1,0,2,3,2, 5,0,4,-1,-2,1,-2,4,2,3,-1,-1,-2,0,1,-5,0,0,1,-1,-4,1,-3,-3,0,-4	06/25/2014
007336XLco ***ID: 7638***	-1,-2,0,-1,-1,-3,-1,-4,-4,3,-3,-5,1,4,0,1,0,3,0,-2,0,1,-2,2,2,5,4, 1,-3,3,0,-3,2,0,5,2,-2,1,-1,1,4,2,-2,0,-2,3,2,-1,1,-5,-1,0,-4	06/30/2014
007275bPvh ***ID: 7642***	0,-1,-1,-3,0,-3,0,0,2,-1,0,0,-3,3,2,5,-1,2,-2,0,1,-5,-2,5,-2,4,1, -2,-2,3,-1,0,2,3,2,-5,-1,4,1,4,1,1,-3,0,2,3,1,-4,1,-1,-4,-2,-4	06/30/2014
007339mzlD ***ID: 7644***	-3,0,2,0,3,-2,-1,0,1,3,1,1,2,0,-1,-1,1,1,-2,5,3,-3,1,0,0,-4,5, -2,-5,-1,-1,3,1,-5,2,2,2,-3,4,0,-4,4,-3,0,2,-2,-4,0,-2,-1,-1,4,-2	07/02/2014
007256oiFz ***ID: 7646***	3,0,-4,-2,0,-2,1,-1,-1,5,5,1,0,-3,-2,-4,-4,1,-2,2,4,-5,0,0,-1,2,-3, 2,0,-1,-1,-2,-3,-2,2,1,4,3,-5,-1,0,2,4,1,3,1,3,2,-1,0,0,1,-3	07/02/2014
007332wKYH ***ID: 7647***	0,0,0,-1,-3,5,-1,-2,-1,5,-5,1,2,-2,0,3,1,1,-3,3,-3,2,-4,2,-1,1,1, 3,-1,1,-5,-4,-2,0,1,2,-1,4,0,-1,-2,4,2,2,-4,0,-2,0,-2,0,-3,3,4	07/03/2014
007344EwlK ***ID: 7650***	-5,0,-2,0,-3,-1,-4,-1,3,4,-1,1,4,-2,0,3,-4,-1,-2,3,1,-1,3,-4,-3,2,1, 2,-3,2,2,2,0,5,0,-2,5,4,2,-1,-2,1,-5,0,0,-2,-3,0,1,0,-1,1,1	07/05/2014
007312ldAX ***ID: 7651***	-4,-2,-1,0,-2,-4,2,-2,-5,-3,0,0,0,5,-3,1,0,1,3,2,-5,3,1,1,2,1,3, 4,-1,-2,-4,-3,0,-2,0,5,4,2,2,-1,2,0,3,-1,-1,4,1,0,-3,-1,-2,-1,1	07/06/2014
007343PjlQ ***ID: 7653***	-2,-2,-2,3,-4,1,-3,-3,0,0,-1,3,0,5,-2,1,2,-1,-3,-4,1,-5,3,-4,2,4,5, 3,0,2,4,0,1,2,1,2,0,4,1,-1,-1,0,-5,-1,1,2,-1,-2,-1,-2,0,0,-3	07/06/2014
007345qTjV ***ID: 7654***	-3,-2,1,0,1,0,-4,-5,0,-5,-1,4,3,-3,-2,-2,3,2,0,2,0,-1,1,-1,0,-3,3, 3,-3,-4,-1,-1,4,-4,1,-2,5,-1,1,2,-1,1,2,2,2,5,1,0,0,-2,-2,0,4	07/07/2014
007346dBEN ***ID: 7655***	0,1,-2,0,-4,-3,-1,-4,-3,-2,-1,1,5,2,0,1,2,-1,1,-1,0,-5,3,3,-3,2,1, 2,4,2,0,-2,-1,-5,-1,-2,-2,3,-2,0,5,4,0,0,-4,3,1,4,-3,0,1,-1,2	07/07/2014
007347ccCd ***ID: 7658***	0,-1,0,-4,0,0,3,-5,0,-2,-2,-4,4,2,-2,3,-3,1,-1,-1,-1,-3,2,3,-1,1,5, 2,0,1,1,-5,2,-1,2,1,3,-3,-2,1,2,5,-2,0,-1,4,-3,-2,-4,0,1,0,4	07/08/2014
007284TmMc ***ID: 7659***	-3,-3,3,-3,2,0,-5,-2,3,1,-1,-2,0,1,5,1,0,4,-2,2,-2,-4,-1,-1,0,1,2, 1,0,-1,-1,0,2,0,4,2,2,3,-4,-1,5,3,1,-2,-2,4,-5,-3,0,-4,1,0,-1	07/09/2014
007349RlqQ ***ID: 7662***	-2,0,-3,-1,-1,1,4,-1,-5,0,-5,-4,2,2,3,-3,3,0,3,-2,5,4,2,-4,0,5,-3, -2,0,-4,1,-1,-2,-1,4,-2,1,-1,1,-3,3,2,1,1,2,0,2,-1,0,0,0,-2,1	07/09/2014

Appendix 4

Healthcare consumers group: completed Q sort table

Code	QSort	Date
007202RJLR ***ID: 7501***	-2,-1,0,0,3,-1,-1,-4,-1,0,-4,2,0,-3,-1,1,1,-2,-1,3,4,-3,1,2,5,3,-2, 4,2,-1,0,-5,1,-2,3,4,2,2,-3,0,1,-5,-3,0,5,2,-3,3,1,-4,-2,-2,1,0,-1,0,1	05/20/2014
007203vnkj ***ID: 7502***	-5,-1,4,3,-1,-1,4,-5,1,5,2,4,0,2,0,-4,-3,-2,0,0,-3,-4,1,1,1,-2,-3, 2,-1,2,-1,2,1,1,1,-3,5,3,3,-1,-1,-4,3,0,1,3,-2,2,-1,-3,0,-2,-2,0,0,-2,0	05/20/2014
007196slxj ***ID: 7504***	0,-5,1,1,3,0,-1,-1,3,0,2,-1,-3,-2,4,-1,-2,2,1,0,1,-5,-2,-3,-1,5,2, -3,5,0,0,-4,-3,-1,3,3,-1,2,3,-2,1,4,4,2,1,2,-3,1,1,-4,-2,0,-2,0,0,-4,-1	05/20/2014
007197mRXM ***ID: 7506***	2,-2,2,0,0,2,-2,-2,-3,3,3,3,0,-2,0,1,-5,0,-1,1,-1,-3,1,0,0,1,-3, 4,2,-1,-4,-5,-2,0,1,4,3,4,5,2,0,-3,3,-1,-3,5,-4,1,1,-4,-1,-1,2,-2,-1,1,-1	05/20/2014
007207UzJd ***ID: 7508***	1,-2,0,-2,1,-3,4,-1,-1,-3,2,3,-4,-1,3,1,-2,0,5,2,-2,-1,2,-1,2,0,5, 0,1,-4,-3,-5,-5,-1,-3,1,1,3,3,0,1,-1,-1,4,4,0,-4,1,3,2,2,0,-2,0,-3,-2,0	05/20/2014
007212zjvV ***ID: 7509***	0,-1,2,2,1,0,5,2,-1,4,-1,3,-1,-3,-5,4,-1,-3,3,-2,-1,-3,0,-2,1,3,-2, 0,0,1,1,-1,-5,-4,-3,-2,2,-1,2,-3,-4,-2,1,3,3,-4,4,5,1,-2,0,0,1,1,2,0,0	05/20/2014
007198feqc ***ID: 7513***	4,-5,-5,0,-4,0,-4,-3,0,5,2,4,3,5,1,-4,-3,0,-2,1,-1,-2,1,-2,1,4,-1, 0,2,-1,-1,-1,-1,2,0,1,-2,1,1,3,-3,-1,-2,3,2,1,3,-1,2,0,2,3,0,-3,-3,-2,0	05/21/2014
007200chIO ***ID: 7514***	4,-2,-1,1,-1,0,-4,-1,-3,-3,2,3,4,-3,3,-1,1,0,2,0,-3,-2,1,-1,2,3,1, 5,-4,3,-5,-2,1,-1,0,2,5,-5,2,-2,-2,-1,-4,1,3,-2,-1,2,4,-3,1,0,1,0,0,0,0	05/22/2014
007199qwNF ***ID: 7515***	3,1,-1,-2,1,2,3,1,4,-1,1,1,-1,-3,2,-2,0,1,0,2,-1,-3,5,-4,3,0,-1, 3,-2,-4,-5,-3,-1,0,1,4,-4,-3,5,0,3,4,-3,-2,2,2,-2,1,-2,-5,0,0,2,0,-1,-1,0	05/22/2014
007210nqfF ***ID: 7521***	2,1,2,-4,-2,0,-2,5,-1,-1,3,3,0,4,-1,1,3,-3,3,0,-1,3,4,4,1,1,-4, 0,0,-2,0,-2,-3,-3,-1,2,-5,0,-3,0,1,-2,-2,2,1,5,-3,2,1,-5,-1,-1,2,0,-4,-1,1	05/22/2014
007211xumx ***ID: 7522***	-3,1,-3,-2,-4,2,4,-2,0,-2,-4,1,1,5,-1,4,4,5,0,1,-1,0,3,1,2,2,1, 0,1,3,3,-3,3,0,-5,2,-1,2,-2,-1,1,0,-2,0,-3,-4,-5,3,-3,0,-1,-1,2,0,-2,-1,-1	05/22/2014
007209cgts ***ID: 7523***	3,1,-2,-2,2,0,-3,3,5,-1,3,4,-1,-1,2,-2,4,-4,2,4,-1,-4,1,1,2,1,-1, 0,1,-2,1,-4,-5,-3,-3,-1,0,3,-2,3,5,-2,-1,1,-3,-5,-1,1,-3,2,0,0,2,0,0,0,0	05/22/2014
007243XOfK ***ID: 7536***	4,3,2,-1,0,-1,0,-5,3,-1,-2,2,-3,-1,-2,3,-4,-2,-3,1,0,-1,2,0,1,5,1, 1,-1,1,1,-5,1,-4,2,3,2,0,-2,4,1,4,-3,3,-4,2,-2,5,0,-3,0,0,-2,0,-3,-1,-1	05/26/2014
007242RjcZ ***ID: 7540***	2,-2,2,0,-3,2,-3,1,-4,0,-1,-1,-1,3,4,1,0,1,-1,-1,-5,0,5,2,3,2,1, -1,-1,2,-4,1,-2,-5,3,-2,-3,0,4,4,3,-2,0,1,1,-2,-3,5,3,-2,0,-3,1,-1,-4,0,0	05/26/2014
007204JVTV ***ID: 7544***	4,4,1,2,-1,-2,0,-3,2,1,-4,3,0,-3,-1,-2,4,0,0,-1,-3,-1,3,-4,1,-1,-1, 3,1,0,-5,2,1,2,3,5,5,2,-4,-1,-1,2,-5,0,-2,1,-3,3,0,1,-2,1,-2,0,0,-3,-2	05/27/2014
007246DsxL ***ID: 7548***	-1,-2,1,-1,-1,4,-4,-5,-1,5,4,-3,-1,-1,1,2,-2,1,0,-4,-2,-3,1,0,0,1,-4, -3,0,2,-2,-1,-3,3,-2,2,2,0,3,1,1,-3,-1,2,3,4,2,1,3,5,-5,0,-2,0,0,3,0	05/29/2014

Code	QSort	Date
007258yuNS ***ID: 7551***	-2,1,-1,-1,2,4,3,-2,-2,-1,5,2,2,2,2,-2,-2,3,1,3,-3,-1,1,-3,0,-4,-3, 0,3,1,2,-5,-1,-3,-1,-3,4,-1,4,1,3,-1,0,1,1,5,-5,1,0,-4,0,0,-4,-2,0,0,0	05/29/2014
007225kCJa ***ID: 7552***	1,-1,1,-2,-2,-1,-1,3,2,1,3,5,3,-2,-3,2,-2,-1,0,0,-5,-2,2,0,1,1,4, 0,4,3,-4,0,-3,-3,1,-1,2,-4,2,2,0,-2,0,-1,-1,-4,-3,5,3,-5,0,1,4,1,-3,0,-1	05/30/2014
007268Ztrf ***ID: 7558***	4,1,-1,0,2,-1,-3,0,-2,-2,3,-1,4,0,2,1,0,0,-1,-2,1,-3,-1,0,3,3,1, -1,2,2,4,1,-2,0,3,-1,-4,-5,2,-3,5,-3,3,-2,1,2,-1,5,1,-2,0,-3,-4,0,-4,-5,1	06/02/2014
007252Hqth ***ID: 7564***	-1,-1,0,1,-1,3,2,-3,3,-1,2,2,0,-2,-3,0,0,1,1,3,-1,-1,3,-3,5,4,-1, 2,5,-1,2,-3,-3,-2,3,-5,4,-2,-2,0,1,2,0,-2,4,-5,-4,1,-2,-4,1,0,1,0,-4,1,0	06/03/2014
007271wfzH ***ID: 7567***	3,-4,-4,-4,-1,-1,-2,-1,-3,0,4,-1,-1,0,0,-1,2,0,-1,5,4,0,1,0,1,-5,5, -2,2,3,1,0,-5,1,0,2,1,2,3,2,2,-3,-3,-2,3,4,-3,3,0,-1,-2,1,1,1,-3,-2,-2	06/05/2014
007216loAr ***ID: 7569***	1,3,1,-1,1,2,0,-4,2,2,2,4,-1,-3,1,1,1,-1,0,-1,-4,-3,5,-2,-1,-1,-4, 0,0,3,-2,0,0,-1,3,-2,5,-5,3,-1,0,-2,3,-5,2,4,4,1,-3,-3,-2,1,2,0,-2,-3,0	06/07/2014
007278rnlA ***ID: 7579***	-5,2,2,1,-1,0,1,-1,-1,-1,4,1,-2,0,1,-2,-2,1,-1,3,-2,2,3,-5,4,0,5, 4,2,-3,0,-1,-1,3,3,2,0,1,-3,-4,2,-3,-1,-3,-4,0,5,1,3,1,0,-3,0,-2,0,-2,-4	06/08/2014
007290uukV ***ID: 7583***	3,-1,0,-1,-3,1,1,-1,2,1,5,3,2,-2,1,-2,0,2,0,3,-3,-4,-5,-2,2,4,-3, -2,3,0,-1,-1,-4,-2,-2,2,-3,5,2,-1,1,0,3,4,-5,1,-1,1,-4,1,-1,0,4,0,-3,0,0	06/09/2014
007248UUaX ***ID: 7589***	-3,-1,2,0,3,-1,0,-5,2,-1,5,1,5,-1,-1,1,-2,3,1,0,-2,-2,4,1,-3,2,-5, 1,2,2,-1,-4,0,0,4,2,4,0,1,0,-2,-3,-1,0,-1,3,-4,-2,1,1,3,3,-3,0,-4,-2,-3	06/11/2014
007279vqVd ***ID: 7590***	-2,4,-1,0,2,3,0,-5,2,0,0,5,3,0,1,1,-2,-1,-1,-2,-3,-3,1,-2,0,3,-1, 0,-3,3,-1,-5,-2,-3,-1,4,4,-3,1,1,2,-4,2,3,-1,1,-4,5,0,-1,0,2,2,1,-4,-2,1	06/11/2014
007298xwGV ***ID: 7593***	5,5,2,-1,3,2,1,-3,4,4,1,0,3,1,0,0,-4,0,-3,3,-5,-2,2,-4,-3,0,-2, 3,-2,-3,-3,-2,1,-1,-1,4,3,0,1,0,2,-5,-1,2,2,-4,-1,1,-1,1,0,-2,1,-2,-1,-1,0	06/12/2014
007311CXbL ***ID: 7602***	3,-2,1,0,2,3,1,-2,0,2,-1,1,4,-3,2,1,-1,0,0,-1,5,-4,1,-3,5,-1,-2, -3,2,3,-5,-2,3,4,-4,-2,3,-2,1,0,4,0,1,1,0,2,0,2,-3,-4,-1,-1,-1,-3,-5,-1,0	06/16/2014
007303hmfQ ***ID: 7603***	4,3,2,3,1,1,-2,-4,0,0,-1,2,0,-2,3,-1,-1,4,4,1,-3,-4,0,-3,1,1,-2, 1,-1,0,-3,-5,-4,-5,0,5,3,1,3,-1,-2,-1,2,2,-3,5,-3,2,-2,-2,0,-1,2,1,-1,0,0	06/16/2014
007305tjpn ***ID: 7604***	2,-2,-1,-1,-2,0,-2,-5,1,-2,5,-3,1,-4,1,0,-3,-1,5,-1,2,4,2,-2,1,-1,3, 4,-4,0,3,-3,3,-4,-1,0,-2,-5,-1,0,1,0,3,1,2,4,1,0,3,0,-3,2,2,-3,0,1,-1	06/16/2014
007292dVol ***ID: 7606***	4,-1,3,1,0,4,-2,-1,1,1,1,4,-2,-2,-2,-3,0,2,-2,-4,-3,-1,2,-1,3,1,3, -1,2,0,-3,-3,1,-4,5,3,2,3,0,-1,5,-1,2,1,1,2,-5,0,-5,0,0,0,-3,0,-4,-2,-1	06/16/2014
007293BXQD ***ID: 7608***	2,-3,-1,3,2,1,1,-2,-2,0,1,-2,-1,-4,-1,2,4,1,1,1,0,-4,1,-2,-2,1,-5, 3,-3,-1,-3,-4,2,3,-1,0,-3,2,0,0,4,-5,3,5,5,2,0,4,-1,-1,0,-2,3,0,-3,-1,0	06/16/2014
007308rksX ***ID: 7609***	0,-1,-1,3,-2,-3,1,1,2,0,-2,2,3,1,-5,-2,-2,1,4,3,0,5,2,2,2,4,0, 4,0,-3,-1,-4,-1,0,-2,0,-3,3,1,-2,-4,1,-1,0,-5,-1,-1,5,-3,0,2,1,1,-1,-4,3,-3	06/17/2014

Code	QSort	Date
007315fEgZ ***ID: 7610***	4,-2,0,1,-1,1,-4,-2,-5,0,2,2,0,-3,2,1,-3,2,0,5,-5,0,0,0,-3,-1,3, -1,-2,0,-4,-1,1,1,3,1,4,5,3,-3,3,-3,-1,4,1,2,-2,0,1,-2,-1,-1,-4,3,-1,2,-2	06/17/2014
007316uiAm ***ID: 7611***	4,-3,1,-2,5,-1,-3,-2,-5,3,-2,-1,0,2,1,-2,-4,0,0,-1,-4,-1,-1,3,0,1,0, 0,2,-2,-3,0,-3,2,-3,-4,4,2,2,1,-1,1,1,-1,1,2,-2,1,3,-1,0,3,4,0,3,-5,5	06/17/2014
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007328GNkV ***ID: 7641***	1,-3,4,-1,-1,3,-2,-2,0,1,4,2,0,-1,1,3,-5,-2,4,5,0,-2,2,0,1,2,-2, -4,-2,1,0,-5,-1,0,2,1,-3,-1,5,-1,0,-4,-3,1,3,3,2,1,-3,-4,-1,-1,-3,0,2,0,3	06/30/2014
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007352zTZo ***ID: 7668***	-2,-3,-1,0,-1,3,-2,-2,-4,1,-3,2,1,2,1,3,-3,0,-1,2,-1,0,3,-5,4,1,-1, 0,-2,0,-3,-5,1,3,-1,4,4,2,5,3,2,0,1,0,-4,0,1,5,-2,-3,-1,-2,2,1,-4,0,-1	07/11/2014

Appendix 5

Healthcare providers group: study statements

1. Qatar is raising awareness of healthy lifestyles through a variety of programs and activities that target most or all of the different population groups in Qatar
2. The '*Kulluna*' health promotion campaign messages were clear and have affected consumer behaviour in a positive manner
3. People are easily influenced by the eating habits of their friends and colleagues
4. Qatar has no baseline upon which it can judge the success of its healthcare communication efforts
5. Healthcare communication in Qatar focuses on disease literacy and not health literacy
6. There is little or no coordination of health communication messages in Qatar amongst various government entities
7. Anti-smoking "fear advertising" will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting
8. No measures to improve health literacy have been implemented in Qatar
9. The general awareness of current health communication campaigns is very low in Qatar
10. The quality of health communication campaigns in Qatar is generally poor
11. Health care communication in Qatar is based on dictating messages, not on community involvement

12. Creating a healthy lifestyle advice centre and hotline to allow people to ask questions relating to diet and exercise is a good idea
13. Health communication campaigns should be targeted at mothers
14. Partnerships through corporate social responsibility programs can help to coordinate messages and to raise awareness of health care issues better than individual organisations, each delivering their own messages
15. Very little planning is given to health promotion campaigns in Qatar, they are always reactive not proactive
16. Different sectors (government ministries, schools, hospitals) should work together to build a repository of knowledge on health awareness and health education levels amongst various communities in Qatar
17. Health communication campaigns should target individual companies to raise awareness of health issues and explain the benefits of adopting healthy lifestyle habits
18. Health campaigns should target young people, because advice is more effective if it is learnt at an early age
19. Healthcare entities in Qatar have no pre-approved yearly budget for healthcare promotion. This prevents healthcare communication professionals from researching and designing effective promotion campaigns
20. Health authorities and campaign managers need to make the adoption of healthy lifestyle habits fun to encourage people to participate
21. Approvals for health promotion campaigns are not decided by healthcare communication professionals, they are decided by people who have financial approval authority and who may not understand the long term value of such investment

22. Promoting public health is a new idea for Qatar
23. Health promotion campaigns in Qatar do not last long enough to make lasting improvements to people's health
24. Health campaigns would be effective if they targeted *majlis* because it is a place where people meet and socialise
25. Health literacy is not measured in Qatar so healthcare communication is a "hit and miss"
26. The quality and accuracy of health information given to the public must be regulated
27. Educating mothers about lifestyle choices is an important measure that can improve the health of other family members
28. The strong family bonds that exists in Qatari culture should be utilised creatively to encourage people to adopt healthier lifestyle habits
29. The organ donation promotional campaign that was linked to The Holy Qur'an was extremely effective and successful
30. Qatar should devote a larger budget to improving health literacy and promoting healthy lifestyles
31. The responsibilities between health entities in regards to public health promotion and public health education is not clear in Qatar
32. Qatar focuses on building infrastructure to fight disease more than building infrastructure to promote good health
33. The highest health authority in Qatar has the responsibility and ability to improve health awareness among the population
34. There is no cross-government coordination in Qatar to encourage people to improve their lifestyles

35. Schools play an important role in raising awareness of healthy lifestyle habits
36. It is important to build a culture of sport in Qatar to encourage healthy lifestyle habits among children at an early age
37. Healthcare promotion messages alone are not effective in changing lifestyles behaviour of people, government intervention is also necessary, such as in regulating fast food advertising, enforcing food labelling, banning smoking in public places and subsidising fruit and vegetable prices
38. There should be one overall healthcare committee that is empowered to coordinate and drive the efforts of all public health promotional initiatives in Qatar
39. Local health entities have more interest in impressing the public with fancy new hospitals than in encouraging people to change their lifestyles
40. Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results
41. The government should impose a ban on fast food advertising in Qatar
42. The authorities in Qatar should organise events that encourage healthy lifestyles on a regular, ongoing basis and not just as "one -off" events
43. Qatar is making good use of the country's sports facilities to encourage people to exercise regularly
44. The 'Think Pink' walk, "Wheels and Heels" and initiatives about breastfeeding are few campaigns that managed to influence consumer behaviour

45. Despite the investment in health services and research in Qatar, very little research is being done to discover the reasons why many people have unhealthy lifestyles
46. Food labelling in Qatar should include nutrition facts, serving sizes and calorie count
47. The current anti-smoking campaigns are effective in raising public awareness
48. 'Step into Health' campaign that encouraged walking is an ongoing success
49. Lack of expertise in the health communication field is obvious in Qatar and this means health promotion and health education campaigns are not effective
50. The '*Kulluna*' health communication campaign was very effective
51. The '*Kulluna*' health communication campaign provided much useful information to the public
52. The 'Your Health first' campaign is an example of positive collaboration between health institutions
53. Social media is the best medium for raising awareness of health issues in Qatar

Appendix 6

Healthcare consumers group: study statements

1. TV and social media are the best mediums for raising awareness of health issues in Qatar

2. I am not aware of any health promotional campaigns and cannot recall any that took place in the past few years here in Qatar

3. Communication between healthcare institutions and the community is weak in Qatar

4. The poor quality of health promotion campaigns in Qatar indicates that local health communication staff lack skills and knowledge in this field

5. Health promotion campaigns in Qatar are quite old fashioned, I don't relate to them and they do not inspire me

6. A humanitarian approach to healthcare campaigns that makes the community feel cared for would be effective in Qatar

7. Information about health campaigns and events usually only appear in the local papers after they have taken place

8. I don't want to change my lifestyle, so the messages of health campaigns can do little to affect me

9. There is very little communication of health-related events and activities in Qatar

10. Health communication professionals in Qatar are generally not effective at engaging with the community

11. Health promotion campaigns alone can make little or no difference in changing behaviour here in Qatar, government enforcement is also required, such as in regulating fast food advertising and subsidising fruit and vegetable prices

12. When I understand the value of a certain behaviour I am more motivated to adopt that behaviour

13. Health promotional campaigns launched in Qatar are never followed through and are quickly forgotten

14. I feel that most healthcare campaigns are not targeted at me , so I just ignore them

15. Campaigns that encourage people to change to a healthy lifestyle are not effective in Qatar because people are accustomed to get quick results and immediate benefits, following diet and exercise does not show immediate visible results

16. Organisations need to see tangible benefits and results from any health promotion activity if they are to invest in it, long-term benefits are not as attractive or a priority for them

17. Twitter is the best medium for communicating health-related information to the Qatari community

18. Most Qataris believe that support from hospital is all they need to safeguard their health

19. The level of health literacy of Qatari women is very low

20. In Qatar, people care more about the way they look than they do about their diet

21. Changing the lifestyles of older people is very difficult and is a waste of time and money

22. People in Qatar don't look after their health because they know they have access to free healthcare

23. Most smokers are aware of the health risks of smoking but they are not willing to change their habits

24. "I love my child so I prefer not to restrain him in a car seat because I like to feel him close to me while we are driving" This is the attitude of most parents in Qatar

25. Children in Qatar order fast food to be delivered to their homes and this is encouraged by their parents

26. The younger generation is learning bad habits from adults, such as smoking, because it seems to be a widely accepted practice

27. The typical Qatari lifestyle is part of a deeply rooted culture and is difficult to change

28. The terms 'The Qatar Pound' and 'The Qatar Stone' are well known among expats in Qatar because of a widespread belief that the lifestyle here means most people will eventually gain weight

29. The culture in Qatar relates bad health and illness to fate

30. Mass communication techniques are not effective in Qatar because communities are not well integrated and interpret messages in different ways

31. 'National Sports Day' is a one of Qatar's yearly events. It does not encourage me to change my habits and became more active, in fact, I look forward to have the day off

32. Religious practices such as timings of prayers, fasting and a culture of eating at night make it more difficult for people to adopt healthy lifestyle habits

33. Sports facilities in Qatar are built to meet the requirements of men, not women

34. The traditional Qatari cultural dress does not encourage people to walk

35. Communication of health information in Qatar is not clear, sensitive or aligned with the various community needs that reside here

36. The hot weather prevents me from integrating walking into my daily routine

37. Lack of pedestrian infrastructure prevents me from integrating walking as a daily and habitual activity

38. Traffic is an obstacle that prevents people from playing sports regularly

39. Neighborhoods need more public spaces to allow people to integrate light exercise as part of their daily routine

40. Anti-smoking 'fear advertising' will not work in Qatar, positive reinforcement appeals and the use of humour may work better in the Qatari setting

41. Smoking *argela* and *shisha* has become very popular among women in Qatar

42. Anti-smoking campaigns targeted at Qataris will not be effective because smoking is part of Qatari culture

43. Non-smoking places are not respected or enforced in Qatar

44. Schools adherence to serving healthy foods in their canteens is superficial

45. There is a clear lack of healthy food outlets in Qatar

46. Expensive gym subscriptions prevent people from exercising

47. Sports events are widely advertised in Qatar, but I am not interested in them

48. Health promotion will not work unless one has the personal drive and the willingness to change. One must understand the value in adopting a more active and healthy lifestyle choices

49. There is too much conflicting information about which foods are healthy and unhealthy for people to make informed decision about what to eat

50. People in Qatar are too busy to prepare healthy food to eat every day

51. The 'Kulluna' health communication campaign did not provide much useful information

52. The 'Kulluna' health communication campaign failed to make me change my behaviour

53. I am not aware of the anti-smoking' campaign that is currently taking place in Doha

54. The 'Think Pink' walk, 'Wheels and Heels' and initiatives about breastfeeding are few campaigns I recall but they did not influence my behaviour

55. I participated in the 'Step into Health' campaign that encouraged walking, but once my pedometer stopped, so did I

56. The 'Your Health First' campaign has created general awareness amongst health consumers in Qatar

57. The 'Kulluna' health communication campaign was too generalised to be effective

Appendix 7

Sample of initial participants recruiting correspondence

From: YASAR AL ANI

Sent: Tuesday, 27 May, 2014 10:31 AM

To: Ann Marie Cannaby

Subject: Participation in research

Dear Ann,

I would like to invite you to participate in a study that investigates health literacy in Qatar and the effects of health promotion campaigns on behaviour change among healthcare consumers. The research project is conducted by myself and will form the basis for the degree of Doctorate in Business Administration (DBA)

Your participation is sought by completing a web based statements sorting survey, these statements represent general opinions about the research subjects amongst healthcare providers in Qatar and were collected via face to face interviews recently, if you are willing to participate, you will be sent one of the study links from a different email address.

Although the tool provides step by step clear instructions on how to complete each screen, please feel free to contact me on 66579045 when you ready to participate or if you have any questions during your participation process.

Please advise if you are willing to participate so that the link can be forwarded.

Thanking you in advance,

Kind regards

Yasar Alani

Executive Director-Image & Environment of Care

Facilities & Workforce Development

Tel: (+974) 44395240
Fax: (+974) 44395002
Mob: (+974) 66579045
P.O.Box 3050 Doha, Qatar

www.hmc.org.qa

Appendix 8

8A) Q-Assessor invitation email letter

Subject: Participation in a research study

Hello!

You are invited to participate in a study that investigates health literacy in Qatar and the effects of health promotional campaigns on behaviour change among healthcare consumers.

The research project is conducted by Yasar Alani and will form the basis for the degree of Doctorate in Business Administration (DBA)at the University of Notre Dame Australia under the supervision of A/Professor Helene-Woodman, School of Business.

The following link will present you with a screen that holds statements for you to drag and drop into categories that range from "agree", "uncertain" to "disagree" according to how you feel about each statement. This will be followed by another screen that will allow you to sort the same statements across a wider "agree" to "disagree" range. Please read the instructions carefully and take your time in the sorting process. Note, that there is no "wrong" or "right" answer, the sorting process should be based entirely on your personal opinion and how you feel about each statement. After this process, there will be three short follow up questions to allow you to elaborate on your response.

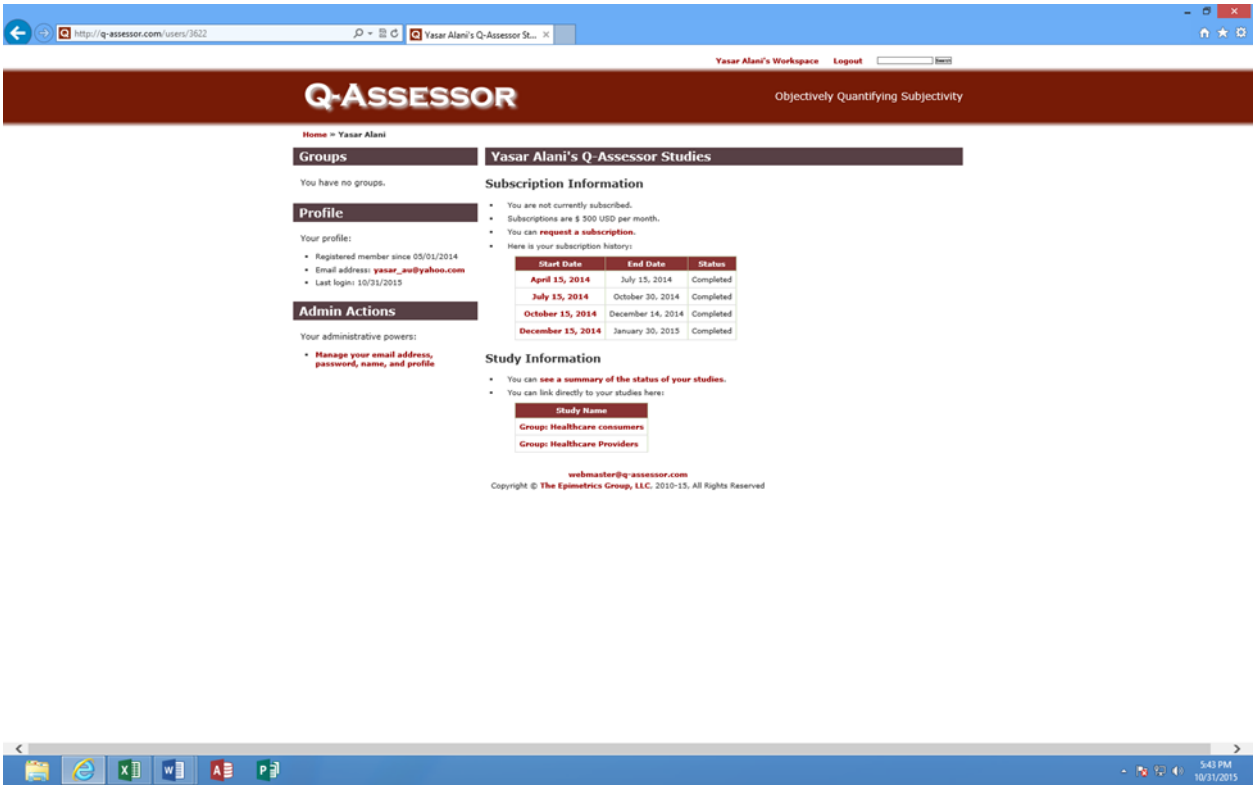
As part of the University requirements, you will need to sign an "Informed Consent Form", the form is to be emailed to you separately and a short phone interview on the sorting procedure may also be followed up by the researcher.

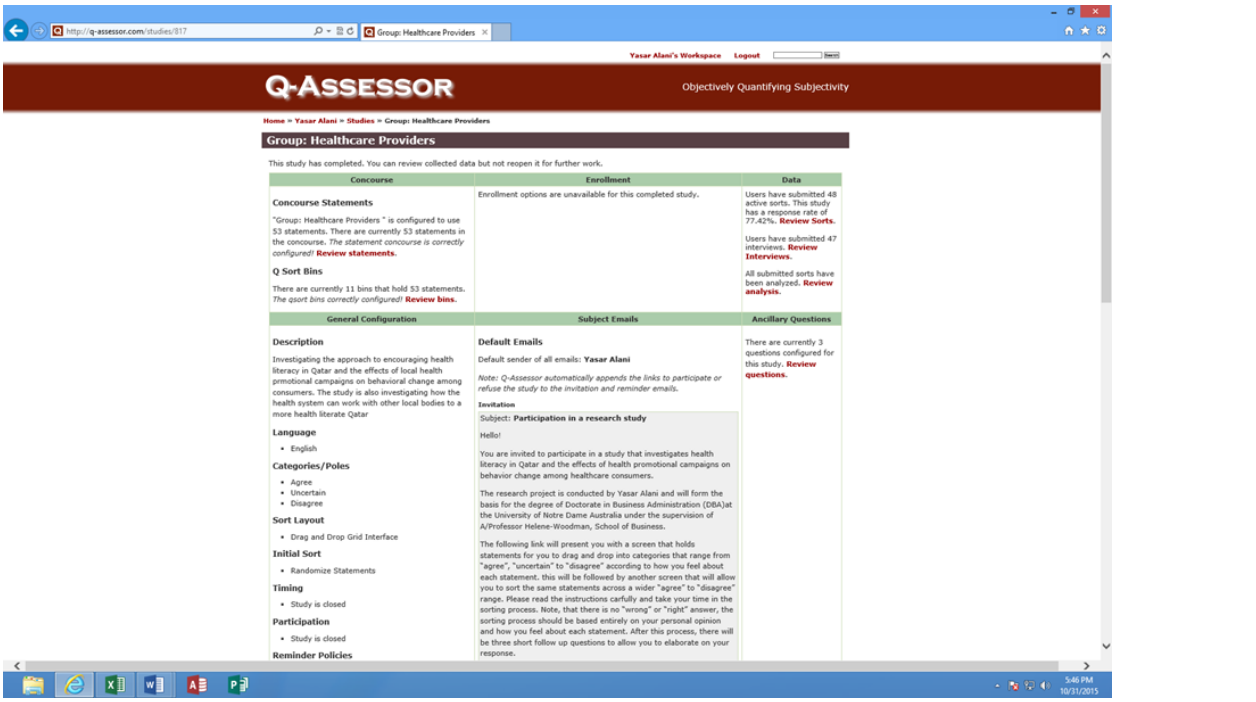
It is estimated that it will take you approximately 30 minutes to complete the sorting process including the follow up questions. If you are willing to participate in this study, please respond promptly.

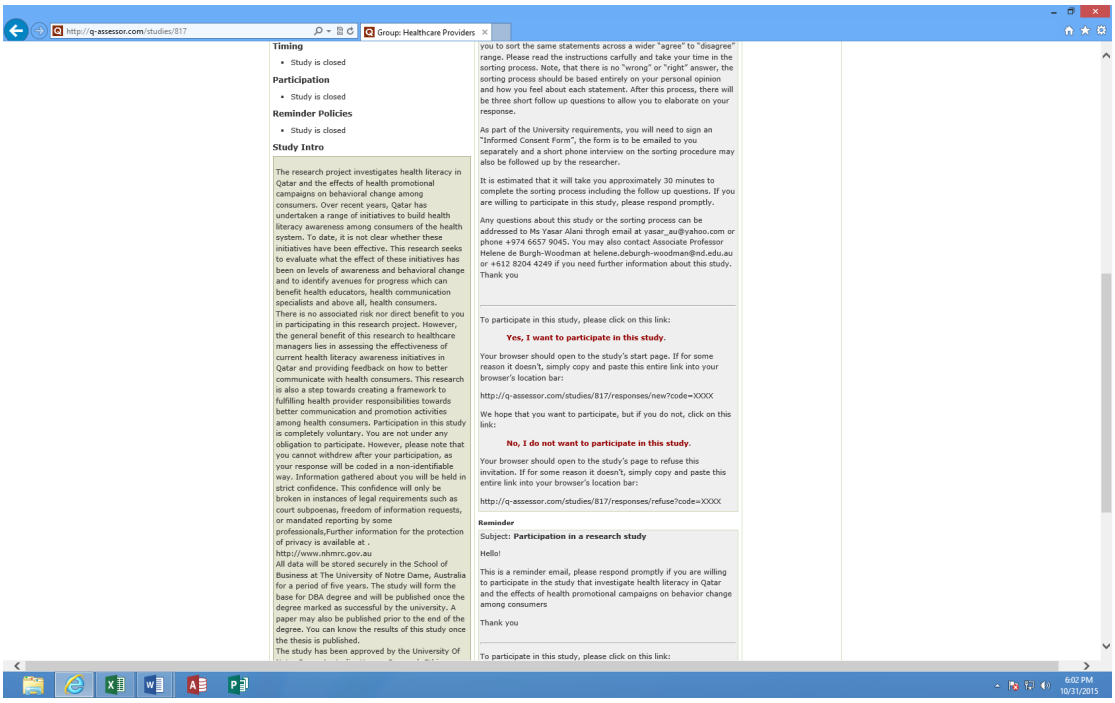
Any questions about this study or the sorting process can be addressed to Ms Yasar Alani through email at yasar_au@yahoo.com or phone +974 6657 9045. You may also contact Associate Professor Helene de Burgh-Woodman at Helene.deburgh-woodman@nd.edu.au or +612 8204 4249 if you need further information about this study.

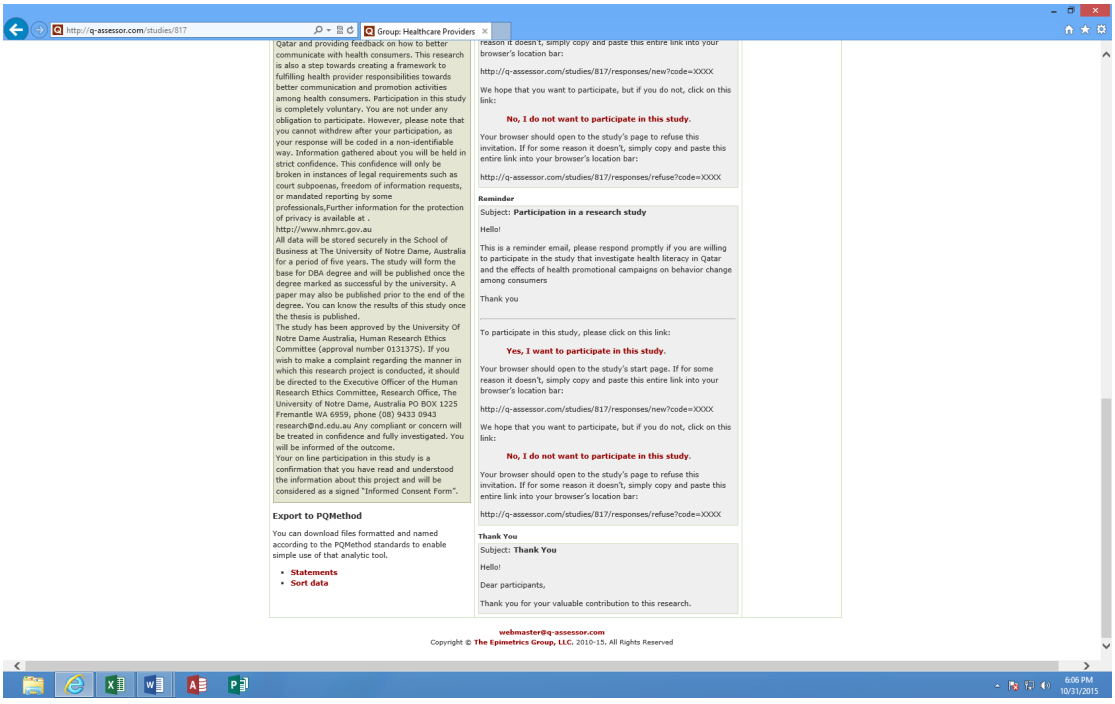
Thank you

8B) Q-Assessor web pages






http://q-assessor.com/studies/817
Group: Healthcare Providers
Timing
Study is closed
Participation
Study is closed
Reminder Policies
Study is closed
Study Intro
The research project investigates health literacy in Qatar and the effects of health promotional campaigns on behavioral change among consumers. Over recent years, Qatar has undertaken a range of initiatives to build health literacy awareness among consumers of the health system. To date, it is not clear whether these initiatives have been effective. This research seeks to evaluate what the effect of these initiatives has been on levels of awareness and behavioral change and to identify avenues for progress which can benefit health educators, health communication specialists and above all, health consumers.
There is no associated risk nor direct benefit to you in participating in this research project. However, the general benefit of this research to healthcare managers lies in assessing the effectiveness of current health literacy awareness initiatives in Qatar and providing feedback on how to better communicate with health consumers. This research is also a step towards creating a framework to fulfilling health provider responsibilities towards better communication and promotion activities among health consumers. Participation in this study is completely voluntary. You are not under any obligation to participate. However, please note that you cannot withdrew after your participation, as your response will be coded in a non-identifiable way. Information gathered about you will be held in strict confidence. This confidence will only be broken in instances of legal requirements such as court subpoenas, freedom of information requests, or mandated reporting by some professionals,Further information for the protection of privacy is available at . http://www.nhmrc.gov.au
All data will be stored securely in the School of Business at The University of Notre Dame, Australia for a period of five years. The study will form the base for DBA degree and will be published once the degree marked as successful by the university. A paper may also be published prior to the end of the degree. You can know the results of this study once the thesis is published.
The study has been approved by the University Of
you to sort the same statements across a wider "agree" to "disagree" range. Please read the instructions carfully and take your time in the sorting process. Note, that there is no "wrong" or "right" answer, the sorting process should be based entirely on your personal opinion and how you feel about each statement. After this process, there will be three short follow up questions to allow you to elaborate on your response.
As part of the University requirements, you will need to sign an "Informed Consent Form", the form is to be emailed to you separately and a short phone interview on the sorting procedure may also be followed up by the researcher.
It is estimated that it will take you approximately 30 minutes to complete the sorting process including the follow up questions. If you are willing to participate in this study, please respond promptly.
Any questions about this study or the sorting process can be addressed to Ms Yasar Alani throgh email at yasar_au@yahoo.com or phone +974 6657 9045. You may also contact Associate Professor Helene de Burgh-Woodman at helene.deburgh-woodman@nd.edu.au or +612 8204 4249 if you need further information about this study.
Thank you
To participate in this study, please click on this link:
Yes, I want to participate in this study.
Your browser should open to the study's start page. If for some reason it doesn't, simply copy and paste this entire link into your browser's location bar:
http://q-assessor.com/studies/817/responses/new?code=XXXX
We hope that you want to participate, but if you do not, click on this link:
No, I do not want to participate in this study.
Your browser should open to the study's page to refuse this invitation. If for some reason it doesn't, simply copy and paste this entire link into your browser's location bar:
http://q-assessor.com/studies/817/responses/refuse?code=XXXX
Reminder
Subject: Participation in a research study
Hello!
This is a reminder email, please respond promptly if you are willing to participate in the study that investigate health literacy in Qatar and the effects of health promotional campaigns on behavior change among consumers
Thank you
To participate in this study, please click on this link:
6:02 PM
10/31/2015


http://q-assessor.com/studies/817
Group: Healthcare Providers
Qatar and providing feedback on how to better communicate with health consumers. This research is also a step towards creating a framework to fulfilling health provider responsibilities towards better communication and promotion activities among health consumers. Participation in this study is completely voluntary. You are not under any obligation to participate. However, please note that you cannot withdrew after your participation, as your response will be coded in a non-identifiable way. Information gathered about you will be held in strict confidence. This confidence will only be broken in instances of legal requirements such as court subpoenas, freedom of information requests, or mandated reporting by some professionals,Further information for the protection of privacy is available at . http://www.nhmrc.gov.au
All data will be stored securely in the School of Business at The University of Notre Dame, Australia for a period of five years. The study will form the base for DBA degree and will be published once the degree marked as successful by the university. A paper may also be published prior to the end of the degree. You can know the results of this study once the thesis is published.
The study has been approved by the University Of Notre Dame Australia, Human Research Ethics Committee (approval number 0131375). If you wish to make a complaint regarding the manner in which this research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office, The University of Notre Dame, Australia PO BOX 1225 Fremantle WA 6959, phone (08) 9433 0943 research@nd.edu.au Any compliant or concern will be treated in confidence and fully investigated. You will be informed of the outcome.
Your on line participation in this study is a confirmation that you have read and understood the information about this project and will be considered as a signed "Informed Consent Form".
Export to PQMethod
You can download files formatted and named according to the PQMethod standards to enable simple use of that analytic tool.
Statements
Sort data
reason it doesn't, simply copy and paste this entire link into your browser's location bar:
http://q-assessor.com/studies/817/responses/new?code=XXXX
We hope that you want to participate, but if you do not, click on this link:
No, I do not want to participate in this study.
Your browser should open to the study's page to refuse this invitation. If for some reason it doesn't, simply copy and paste this entire link into your browser's location bar:
http://q-assessor.com/studies/817/responses/refuse?code=XXXX
Reminder
Subject: Participation in a research study
Hello!
This is a reminder email, please respond promptly if you are willing to participate in the study that investigate health literacy in Qatar and the effects of health promotional campaigns on behavior change among consumers
Thank you
To participate in this study, please click on this link:
Yes, I want to participate in this study.
Your browser should open to the study's start page. If for some reason it doesn't, simply copy and paste this entire link into your browser's location bar:
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http://q-assessor.com/studies/817/responses/refuse?code=XXXX
Thank You
Subject: Thank You
Hello!
Dear participants,
Thank you for your valuable contribution to this research.
webmaster@q-assessor.com
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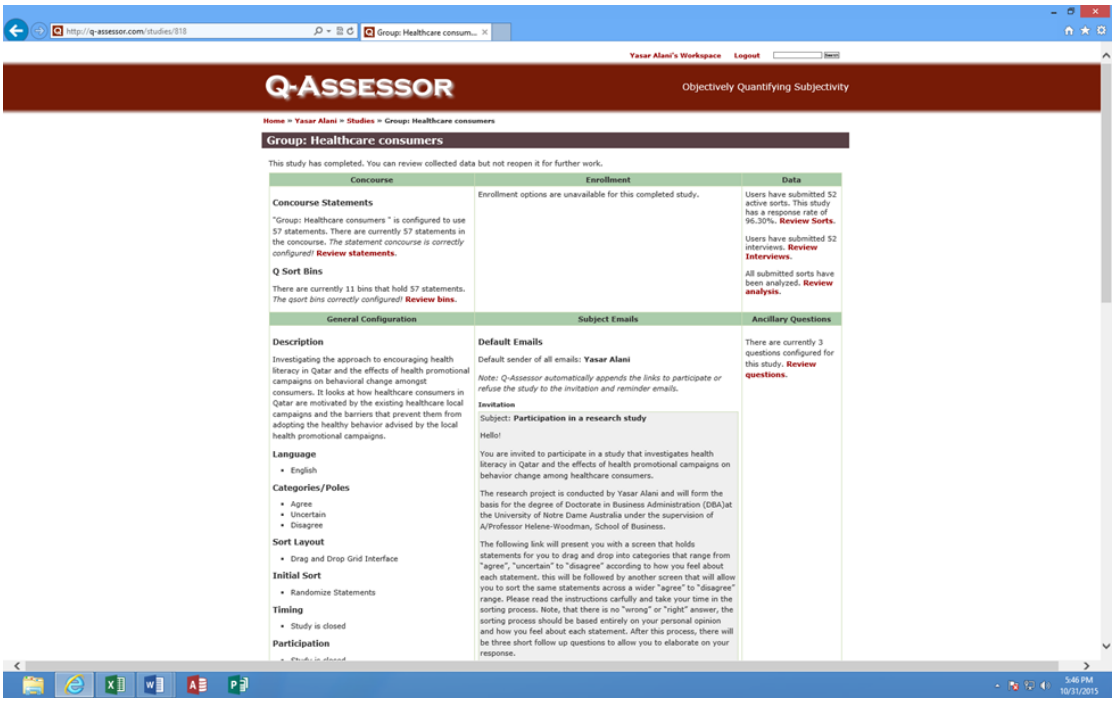
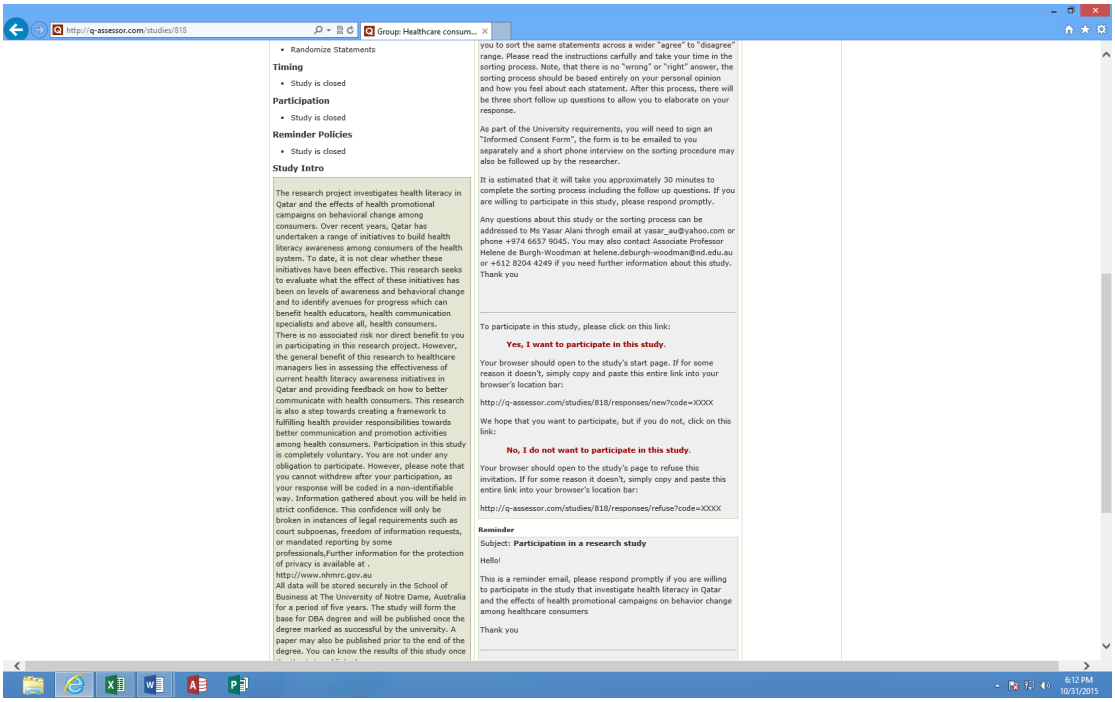
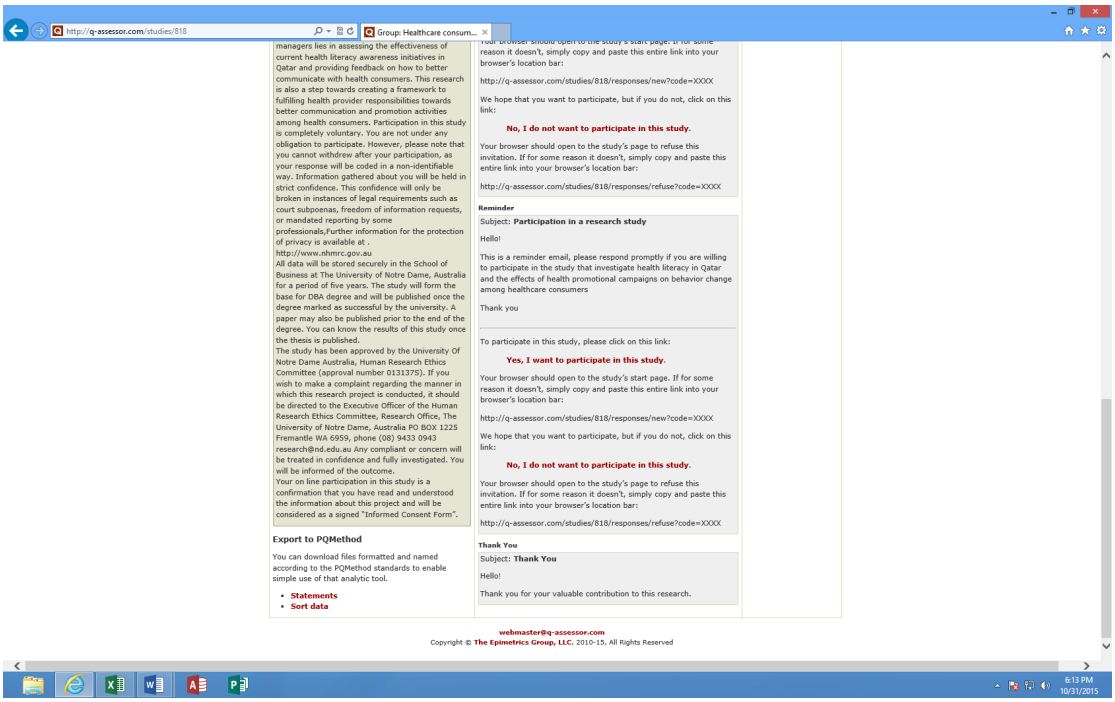
6:06 PM
10/31/2015


Q-ASSESSOR
Objectively Quantifying Subjectivity
Group: Healthcare consumers
This study has completed. You can review collected data but not reopen it for further work.
Concourse
Enrollment
Data
Concourse Statements
Q Sort Bins
Enrollment options are unavailable for this completed study.
General Configuration
Subject Emails
Ancillary Questions
Description
Default Emails
Language
Categories/Poles
Sort Layout
Initial Sort
Timing
Participation


Reminder Policies
Study Intro
Invitation
Reminder


managers lies in assessing the effectiveness of current health literacy awareness initiatives in Qatar and providing feedback on how to better communicate with health consumers. This research is also a step towards creating a framework to fulfilling health provider responsibilities towards better communication and promotion activities among health consumers. Participation in this study is completely voluntary. You are not under any obligation to participate. However, please note that you cannot withdrew after your participation, as your response will be coded in a non-identifiable way. Information gathered about you will be held in strict confidence. This confidence will only be broken in instances of legal requirements such as court subpoenas, freedom of information requests, or mandated reporting by some professionals,Further information for the protection of privacy is available at . http://www.nhmrc.gov.au
All data will be stored securely in the School of Business at The University of Notre Dame, Australia for a period of five years. The study will form the base for DBA degree and will be published once the degree marked as successful by the university. A paper may also be published prior to the end of the degree. You can know the results of this study once the thesis is published.
The study has been approved by the University Of Notre Dame Australia, Human Research Ethics Committee (approval number 0131375). If you wish to make a complaint regarding the manner in which this research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office, The University of Notre Dame, Australia PO BOX 1225 Fremantle WA 6959, phone (08) 9433 0943 research@nd.edu.au Any compliant or concern will be treated in confidence and fully investigated. You will be informed of the outcome.
Your on line participation in this study is a confirmation that you have read and understood the information about this project and will be considered as a signed "Informed Consent Form".
Export to PQMethod
You can download files formatted and named according to the PQMethod standards to enable simple use of that analytic tool.
Statements
Sort data
reason it doesn't, simply copy and paste this entire link into your browser's location bar:
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http://q-assessor.com/studies/818/responses/refuse?code=XXXX
Thank You
Subject: Thank You
Hello!
Thank you for your valuable contribution to this research.
webmaster@q-assessor.com
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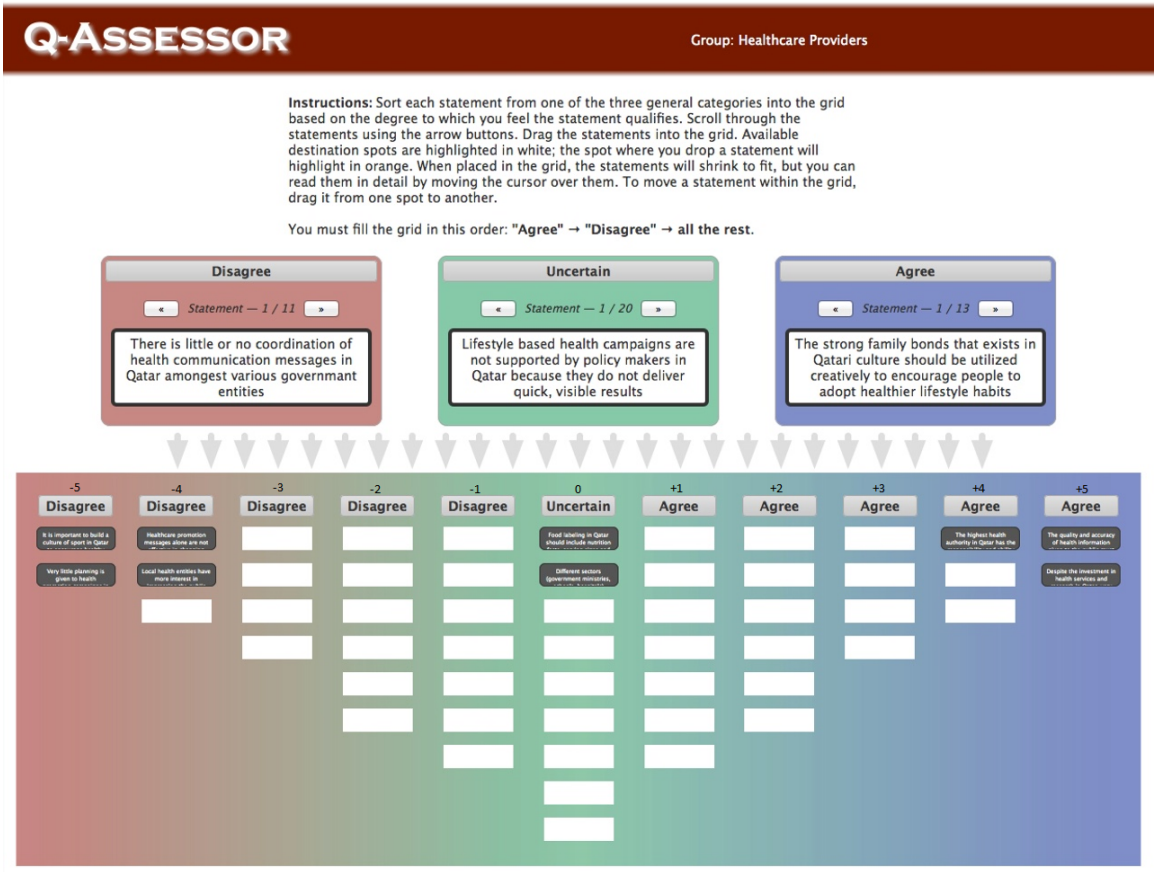
Q-ASSESSOR
Group: Healthcare Providers
Instructions: Sort each statement from one of the three general categories into the grid based on the degree to which you feel the statement qualifies. Scroll through the statements using the arrow buttons. Drag the statements into the grid. Available destination spots are highlighted in white; the spot where you drop a statement will highlight in orange. When placed in the grid, the statements will shrink to fit, but you can read them in detail by moving the cursor over them. To move a statement within the grid, drag it from one spot to another.
You must fill the grid in this order: "Agree" → "Disagree" → all the rest.
Disagree
« Statement — 1 / 11 »
There is little or no coordination of health communication messages in Qatar amongest various governmant entities
Uncertain
« Statement — 1 / 20 »
Lifestyle based health campaigns are not supported by policy makers in Qatar because they do not deliver quick, visible results
Agree
« Statement — 1 / 13 »
The strong family bonds that exists in Qatari culture should be utilized creatively to encourage people to adopt healthier lifestyle habits
-5 Disagree
-4 Disagree
-3 Disagree
-2 Disagree
-1 Disagree
0 Uncertain
+1 Agree
+2 Agree
+3 Agree
+4 Agree
+5 Agree

Appendix 9

Providers analysis correlation matrix

Sorts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1	100	1	19	7	16	17	-8	22	22	29	12	23	13	12	27	28	-12	25	-7	18	14	-5	7	25	18	30	18	25	18	-4	11	14	15	20	2	2	8	-4	11	22	23	3	15	-18	-7	-12	18	-4
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Appendix 10

Providers factor scores — Factor 1

No.	Statement	Z-scores
14	Partnerships through corporate social responsibility program	1.773
16	Different sectors (government ministries, schools, hospitals	1.534
27	Educating mothers about lifestyle choices is an important me	1.523
46	Food labelling in Qatar should include nutrition facts, servi	1.385
26	The quality and accuracy of health information given to the	1.380
35	Schools play an important role in raising awareness of healt	1.373
42	The authorities in Qatar should organise events that encoura	1.348
38	There should be one overall healthcare committee that is emp	1.329
13	Health communication campaigns should be targeted at mothers	1.184
28	The strong family bonds that exists in Qatari culture should	1.117
33	The highest health authority in Qatar has the responsibility	1.091
30	Qatar should devote a larger budget to improving health lite	0.831
1	Qatar is raising awareness of healthy lifestyles through a v	0.806
18	Health campaigns should target young people, because advice	0.804
53	Social media is the best medium for raising awareness of hea	0.610
23	Health promotion campaigns in Qatar do not last long enough	0.609
41	The government should impose a ban on fast food advertising	0.572
17	Health communication campaigns should target individual comp	0.502
36	It is important to build a culture of sport in Qatar to enco	0.484
29	The organ donation promotional campaign that was linked to T	0.399
48	‘Step into Health’ campaign that encouraged walking is an on	0.352
24	Health campaigns would be effective if they targeted *majlis*	0.337
31	The responsibilities between health entities in regards to p	0.153
37	Healthcare promotion messages alone are not effective in cha	0.136
12	Creating a healthy lifestyle advice centre and hotline to al	0.135
3	People are easily influenced by the eating habits of their f	0.093
43	Qatar is making good use of the country’s sports facilities	-0.023
51	The ‘*Kulluna*’ health communication campaign provided much us	-0.048

44	The ‘Think Pink’ walk, ‘Wheels and Heels’ and initiatives ab	-0.167
7	Anti-smoking and fear advertising will not work in Qatar,	-0.245
50	The ‘*Kulluna*’ health communication campaign was very effecti	-0.255
47	The current anti-smoking’ campaigns are effective in raisin	-0.260
52	The ‘Your Health first’ campaign is an example of positive c	-0.357
4	Qatar has no baseline upon which it can judge the success of	-0.376
20	Health authorities and campaign managers need to make the ad	-0.483
2	The ‘*Kulluna*’ health promotion campaign messages were clear	-0.500
21	Approvals for health promotion campaigns are not decided by	-0.517
25	Health literacy is not measured in Qatar so healthcare commu	-0.531
19	Healthcare entities in Qatar have no pre-approved yearly bud	-0.584
6	There is little or no coordination of health communication m	-0.667
5	Healthcare communication in Qatar focuses on disease literac	-0.732
15	Very little planning is given to health promotion campaigns	-0.784
45	Despite the investment in health services and research in Qa	-0.826
32	Qatar focuses on building infrastructure to fight disease mo	-1.007
11	Health care communication in Qatar is based on dictating mes	-1.046
40	Lifestyle based health campaigns are not supported by policy	-1.113
34	There is no cross-government coordination in Qatar to encour	-1.140
9	The general awareness of current health communication campai	-1.171
39	Local health entities have more interest in impressing the p	-1.333
10	The quality of health communication campaigns in Qatar is ge	-1.530
49	Lack of expertise in the health communication field is obvio	-1.862
22	Promoting public health is a new idea for Qatar	-2.015
8	No measures to improve health literacy have been implemented	-2.290

Appendix 11

Providers factor scores — Factor 2

No.	Statement	Z-scores
35	Schools play an important role in raising awareness of healt	1.991
28	The strong family bonds that exists in Qatari culture should	1.850
14	Partnerships through corporate social responsibility program	1.630
36	It is important to build a culture of sport in Qatar to enco	1.493
26	The quality and accuracy of health information given to the	1.391
16	Different sectors (government ministries, schools, hospitals	1.139
37	Healthcare promotion messages alone are not effective in cha	1.122
33	The highest health authority in Qatar has the responsibility	1.074
38	There should be one overall healthcare committee that is emp	1.058
46	Food labelling in Qatar should include nutrition facts, servi	1.043
17	Health communication campaigns should target individual comp	0.996
30	Qatar should devote a larger budget to improving health lite	0.950
18	Health campaigns should target young people, because advice	0.653
25	Health literacy is not measured in Qatar so healthcare commu	0.570
9	The general awareness of current health communication campai	0.541
27	Educating mothers about lifestyle choices is an important me	0.514
12	Creating a healthy lifestyle advice centre and hotline to al	0.509
4	Qatar has no baseline upon which it can judge the success of	0.416
34	There is no cross-government coordination in Qatar to encour	0.377
10	The quality of health communication campaigns in Qatar is ge	0.315
22	Promoting public health is a new idea for Qatar	0.305
3	People are easily influenced by the eating habits of their f	0.282
42	The authorities in Qatar should organise events that encoura	0.265
31	The responsibilities between health entities in regards to p	0.201
24	Health campaigns would be effective if they targeted *majlis*	0.145
6	There is little or no coordination of health communication m	0.104
32	Qatar focuses on building infrastructure to fight disease mo	0.101
21	Approvals for health promotion campaigns are not decided by	0.097

23	Health promotion campaigns in Qatar do not last long enough	0.058
13	Health communication campaigns should be targeted at mothers	0.028
45	Despite the investment in health services and research in Qa	0.028
11	Health care communication in Qatar is based on dictating mes	-0.003
40	Lifestyle based health campaigns are not supported by policy	-0.103
5	Healthcare communication in Qatar focuses on disease literac	-0.170
29	The organ donation promotional campaign that was linked to T	-0.318
39	Local health entities have more interest in impressing the p	-0.407
15	Very little planning is given to health promotion campaigns	-0.443
49	Lack of expertise in the health communication field is obvio	-0.448
52	The 'Your Health first' campaign is an example of positive c	-0.546
7	Anti-smoking and fear advertising will not work in Qatar,	-0.924
8	No measures to improve health literacy have been implemented	-1.065
19	Healthcare entities in Qatar have no pre-approved yearly bud	-1.072
44	The 'Think Pink' walk, 'Wheels and Heels' and initiatives ab	-1.111
47	The current anti-smoking' campaigns are effective in raisin	-1.156
20	Health authorities and campaign managers need to make the ad	-1.195
48	'Step into Health' campaign that encouraged walking is an on	-1.202
41	The government should impose a ban on fast food advertising	-1.205
51	The '*Kulluna*' health communication campaign provided much us	-1.402
50	The '*Kulluna*' health communication campaign was very effecti	-1.493
53	Social media is the best medium for raising awareness of hea	-1.504
1	Qatar is raising awareness of healthy lifestyles through a v	-1.657
2	The '*Kulluna*' health promotion campaign messages were clear	-1.672
43	Qatar is making good use of the country's sports facilities	-2.150

Appendix 12

Providers factor scores — Factor 3

No.	Statement	Z-scores
27	Educating mothers about lifestyle choices is an important me	1.805
16	Different sectors (government ministries, schools, hospitals	1.743
36	It is important to build a culture of sport in Qatar to enco	1.719
20	Health authorities and campaign managers need to make the ad	1.460
14	Partnerships through corporate social responsibility program	1.434
28	The strong family bonds that exists in Qatari culture should	1.366
45	Despite the investment in health services and research in Qa	1.235
37	Healthcare promotion messages alone are not effective in cha	1.067
42	The authorities in Qatar should organise events that encoura	0.932
46	Food labelling in Qatar should include nutrition facts, servi	0.926
39	Local health entities have more interest in impressing the p	0.912
35	Schools play an important role in raising awareness of healt	0.906
12	Creating a healthy lifestyle advice centre and hotline to al	0.899
30	Qatar should devote a larger budget to improving health lite	0.870
3	People are easily influenced by the eating habits of their f	0.777
31	The responsibilities between health entities in regards to p	0.670
26	The quality and accuracy of health information given to the	0.665
1	Qatar is raising awareness of healthy lifestyles through a v	0.590
43	Qatar is making good use of the country's sports facilities	0.552
44	The 'Think Pink' walk, 'Wheels and Heels' and initiatives ab	0.470
51	The '*Kulluna*' health communication campaign provided much us	0.324
29	The organ donation promotional campaign that was linked to T	0.265
32	Qatar focuses on building infrastructure to fight disease mo	0.207
25	Health literacy is not measured in Qatar so healthcare commu	0.122
48	'Step into Health' campaign that encouraged walking is an on	0.103
17	Health communication campaigns should target individual comp	0.064
2	The '*Kulluna*' health promotion campaign messages were clear	-0.091
4	Qatar has no baseline upon which it can judge the success of	-0.109

11	Health care communication in Qatar is based on dictating mes	-0.145
23	Health promotion campaigns in Qatar do not last long enough	-0.171
52	The 'Your Health first' campaign is an example of positive c	-0.222
40	Lifestyle based health campaigns are not supported by policy	-0.261
33	The highest health authority in Qatar has the responsibility	-0.302
18	Health campaigns should target young people, because advice	-0.319
50	The '*Kulluna*' health communication campaign was very effecti	-0.358
7	Anti-smoking and fear advertising will not work in Qatar,	-0.412
13	Health communication campaigns should be targeted at mothers	-0.531
19	Healthcare entities in Qatar have no pre-approved yearly bud	-0.545
49	Lack of expertise in the health communication field is obvio	-0.712
21	Approvals for health promotion campaigns are not decided by	-0.781
38	There should be one overall healthcare committee that is emp	-0.899
9	The general awareness of current health communication campai	-0.910
6	There is little or no coordination of health communication m	-0.967
15	Very little planning is given to health promotion campaigns	-1.081
53	Social media is the best medium for raising awareness of hea	-1.081
34	There is no cross-government coordination in Qatar to encour	-1.086
10	The quality of health communication campaigns in Qatar is ge	-1.276
47	The current anti-smoking' campaigns are effective in raisin	-1.325
22	Promoting public health is a new idea for Qatar	-1.453
24	Health campaigns would be effective if they targeted *majlis*	-1.571
5	Healthcare communication in Qatar focuses on disease literac	-1.644
8	No measures to improve health literacy have been implemented	-1.844
41	The government should impose a ban on fast food advertising	-1.987

Appendix 13

Providers factor scores — Factor 4

No.	Statement	Z-scores
27	Educating mothers about lifestyle choices is an important me	2.032
18	Health campaigns should target young people, because advice	1.859
46	Food labelling in Qatar should include nutrition facts, servi	1.696
28	The strong family bonds that exists in Qatari culture should	1.659
37	Healthcare promotion messages alone are not effective in cha	1.607
42	The authorities in Qatar should organise events that encoura	1.460
20	Health authorities and campaign managers need to make the ad	1.184
36	It is important to build a culture of sport in Qatar to enco	1.156
53	Social media is the best medium for raising awareness of hea	1.005
35	Schools play an important role in raising awareness of healt	0.888
16	Different sectors (government ministries, schools, hospitals	0.835
24	Health campaigns would be effective if they targeted *majlis*	0.701
33	The highest health authority in Qatar has the responsibility	0.676
12	Creating a healthy lifestyle advice centre and hotline to al	0.664
14	Partnerships through corporate social responsibility program	0.487
17	Health communication campaigns should target individual comp	0.420
13	Health communication campaigns should be targeted at mothers	0.357
39	Local health entities have more interest in impressing the p	0.330
11	Health care communication in Qatar is based on dictating mes	0.325
22	Promoting public health is a new idea for Qatar	0.254
25	Health literacy is not measured in Qatar so healthcare commu	0.199
26	The quality and accuracy of health information given to the	0.132
43	Qatar is making good use of the country’s sports facilities	0.122
45	Despite the investment in health services and research in Qa	0.112
3	People are easily influenced by the eating habits of their f	0.089
6	There is little or no coordination of health communication m	0.078
7	Anti-smoking and fear advertising will not work in Qatar,	0.018
44	The ‘Think Pink’ walk, ‘Wheels and Heels’ and initiatives ab	-0.028

23	Health promotion campaigns in Qatar do not last long enough	-0.094
40	Lifestyle based health campaigns are not supported by policy	-0.099
38	There should be one overall healthcare committee that is emp	-0.126
48	'Step into Health' campaign that encouraged walking is an on	-0.130
9	The general awareness of current health communication campai	-0.142
30	Qatar should devote a larger budget to improving health lite	-0.144
41	The government should impose a ban on fast food advertising	-0.168
19	Healthcare entities in Qatar have no pre-approved yearly bud	-0.216
52	The 'Your Health first' campaign is an example of positive c	-0.272
4	Qatar has no baseline upon which it can judge the success of	-0.345
10	The quality of health communication campaigns in Qatar is ge	-0.452
29	The organ donation promotional campaign that was linked to T	-0.682
49	Lack of expertise in the health communication field is obvio	-0.751
1	Qatar is raising awareness of healthy lifestyles through a v	-0.759
32	Qatar focuses on building infrastructure to fight disease mo	-1.015
50	The '*Kulluna*' health communication campaign was very effecti	-1.136
15	Very little planning is given to health promotion campaigns	-1.143
47	The current anti-smoking' campaigns are effective in raisin	-1.146
21	Approvals for health promotion campaigns are not decided by	-1.230
34	There is no cross-government coordination in Qatar to encour	-1.316
31	The responsibilities between health entities in regards to p	-1.567
2	The '*Kulluna*' health promotion campaign messages were clear	-1.631
5	Healthcare communication in Qatar focuses on disease literac	-1.785
8	No measures to improve health literacy have been implemented	-1.905
51	The '*Kulluna*' health communication campaign provided much us	-2.060

Appendix 14

Providers factor scores — Factor 5

No.	Statement	Z-scores
32	Qatar focuses on building infrastructure to fight disease mo	1.976
38	There should be one overall healthcare committee that is emp	1.920
27	Educating mothers about lifestyle choices is an important me	1.478
39	Local health entities have more interest in impressing the p	1.429
41	The government should impose a ban on fast food advertising	1.385
16	Different sectors (government ministries, schools, hospitals	1.262
33	The highest health authority in Qatar has the responsibility	1.130
37	Healthcare promotion messages alone are not effective in cha	1.091
14	Partnerships through corporate social responsibility program	0.849
26	The quality and accuracy of health information given to the	0.841
46	Food labelling in Qatar should include nutrition facts, servi	0.827
10	The quality of health communication campaigns in Qatar is ge	0.826
23	Health promotion campaigns in Qatar do not last long enough	0.791
5	Healthcare communication in Qatar focuses on disease literac	0.728
28	The strong family bonds that exists in Qatari culture should	0.709
15	Very little planning is given to health promotion campaigns	0.645
20	Health authorities and campaign managers need to make the ad	0.594
35	Schools play an important role in raising awareness of healt	0.521
40	Lifestyle based health campaigns are not supported by policy	0.470
25	Health literacy is not measured in Qatar so healthcare commu	0.446
21	Approvals for health promotion campaigns are not decided by	0.402
42	The authorities in Qatar should organise events that encoura	0.390
9	The general awareness of current health communication campai	0.319
18	Health campaigns should target young people, because advice	0.236
24	Health campaigns would be effective if they targeted *majlis*	0.095
6	There is little or no coordination of health communication m	0.077
36	It is important to build a culture of sport in Qatar to enco	0.030
30	Qatar should devote a larger budget to improving health lite	-0.025

34	There is no cross-government coordination in Qatar to encour	-0.049
29	The organ donation promotional campaign that was linked to T	-0.118
49	Lack of expertise in the health communication field is obvio	-0.189
45	Despite the investment in health services and research in Qa	-0.288
11	Health care communication in Qatar is based on dictating mes	-0.353
4	Qatar has no baseline upon which it can judge the success of	-0.389
3	People are easily influenced by the eating habits of their f	-0.425
44	The 'Think Pink' walk, 'Wheels and Heels' and initiatives ab	-0.457
19	Healthcare entities in Qatar have no pre-approved yearly bud	-0.540
13	Health communication campaigns should be targeted at mothers	-0.543
43	Qatar is making good use of the country's sports facilities	-0.554
31	The responsibilities between health entities in regards to p	-0.599
53	Social media is the best medium for raising awareness of hea	-0.627
2	The '*Kulluna*' health promotion campaign messages were clear	-0.704
52	The 'Your Health first' campaign is an example of positive c	-0.766
12	Creating a healthy lifestyle advice centre and hotline to al	-0.904
51	The '*Kulluna*' health communication campaign provided much us	-1.082
8	No measures to improve health literacy have been implemented	-1.086
7	Anti-smoking and fear advertising will not work in Qatar,	-1.136
50	The '*Kulluna*' health communication campaign was very effecti	-1.290
17	Health communication campaigns should target individual comp	-1.386
48	'Step into Health' campaign that encouraged walking is an on	-1.611
1	Qatar is raising awareness of healthy lifestyles through a v	-1.852
47	The current anti-smoking' campaigns are effective in raisin	-2.001
22	Promoting public health is a new idea for Qatar	-2.492

Appendix 15

Consumers analysis correlation matrix

Sorts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
1	100	17	16	36	17	12	2	25	17	21	13	12	36	6	23	3	9	7	12	33	19	8	7	-6	21	31	14	21	24	3	22	37	7	11	2	-1	-5	20	-15	26	17	1	-12	4	25	39	24	14	11	9	27	24
2	17	100	7	39	6	21	10	2	-6	-11	-10	-15	-1	5	13	19	39	11	-3	15	-5	41	12	9	34	28	20	19	21	-15	19	12	-2	19	18	15	29	25	18	20	-10	-5	13	27	-2	27	21	15	38	23	6	17
3	16	7	100	34	34	6	14	1	27	-7	-15	6	22	7	-4	14	23	10	31	20	15	4	1	37	21	15	-6	19	38	3	36	14	-12	19	16	-2	12	22	-2	26	-7	2	-7	18	13	28	28	2	10	11	10	10
4	36	39	34	100	23	6	25	24	27	17	-14	5	28	23	10	33	39	30	3	9	21	28	9	38	41	39	31	27	59	5	37	28	14	44	32	10	30	37	29	23	5	15	17	15	25	51	36	16	33	23	26	53
5	17	6	34	23	100	17	10	21	28	17	4	27	15	21	3	6	29	19	0	18	31	-13	14	17	15	20	13	3	29	9	21	18	13	33	20	-10	-2	7	-3	11	25	25	3	17	26	25	21	30	33	15	28	13
6	12	21	6	6	17	100	-5	15	-6	1	-6	6	5	1	-7	9	-3	34	-3	25	-20	19	-10	10	-8	21	10	5	14	-8	-11	18	14	-11	8	25	1	10	-12	29	20	-1	22	-3	-8	16	21	-7	26	3	-8	4
7	2	10	14	25	10	-5	100	22	6	9	-9	6	7	16	1	25	4	12	6	5	19	0	0	29	17	11	17	12	6	3	8	5	16	12	24	5	4	29	8	-4	15	17	0	-28	11	31	20	10	-3	1	23	21
8	25	2	1	24	21	15	22	100	27	5	-8	1	11	29	28	9	10	41	15	16	7	23	1	-5	21	35	21	17	35	26	9	18	2	37	15	-15	27	18	12	11	44	20	13	-5	29	40	19	20	17	24	20	22
9	17	-6	27	27	28	-6	6	27	100	21	-1	18	23	17	23	-9	22	19	9	25	12	30	9	17	4	19	31	26	35	12	26	24	9	3	-7	13	4	18	7	-7	19	15	-3	-2	12	41	27	28	14	24	28	25
10	21	-11	-7	17	17	1	9	5	21	100	13	27	15	35	-5	-5	11	23	19	2	19	1	-8	14	3	12	-5	-7	11	8	11	14	21	-4	-1	-21	-6	-7	9	2	-6	8	5	-4	6	31	25	8	3	30	35	-1
11	13	-10	-15	-14	4	-6	-9	-8	-1	13	100	10	18	11	9	-19	7	5	-8	20	2	-19	1	11	0	23	0	5	0	-17	1	2	30	-17	-24	-1	-21	-11	-15	1	-17	39	20	8	-4	4	-18	-6	9	20	17	29
12	12	-15	6	5	27	6	6	1	18	27	10	100	13	7	2	-12	5	22	2	25	14	-2	-1	43	-7	19	21	0	16	-12	15	9	12	-5	-3	8	-24	3	-1	-3	7	3	-6	-14	1	24	6	22	18	23	6	0
13	36	-1	22	28	15	5	7	11	23	15	18	13	100	16	35	-6	7	21	7	24	-3	9	0	11	21	46	25	12	36	12	34	-1	21	11	-6	16	15	23	-5	-3	23	5	-2	11	7	40	16	17	22	8	45	31
14	6	5	7	23	21	1	16	29	17	35	11	7	16	100	-7	15	11	44	31	12	17	7	-4	6	-5	20	7	5	17	-2	29	13	-1	26	17	2	5	23	6	20	17	44	19	-4	24	21	17	25	34	36	36	32
15	23	13	-4	10	3	-7	1	28	23	-5	9	2	35	-7	100	-3	-10	8	-15	7	-3	21	18	-1	18	19	29	11	33	-19	34	2	9	17	-3	7	19	2	-9	-22	13	1	1	-1	4	22	-25	27	9	-4	5	10
16	3	19	14	33	6	9	25	9	-9	-5	-19	-12	-6	15	-3	100	15	-6	5	-15	15	24	-6	13	25	22	16	21	17	13	8	24	-31	26	18	-2	25	8	12	12	7	12	12	8	24	17	35	21	28	3	18	20
17	9	39	23	39	29	-3	4	10	22	11	7	5	7	11	-10	15	100	12	17	32	24	29	4	15	42	37	19	27	35	11	22	8	-12	27	11	7	33	25	7	30	-3	6	17	13	12	31	31	16	49	32	23	21
18	7	11	10	30	19	34	12	41	19	23	5	22	21	44	8	-6	12	100	19	41	19	29	4	20	17	39	17	12	15	-2	21	-9	15	12	13	30	19	20	0	15	17	13	20	-1	5	30	9	10	35	29	29	19
19	12	-3	31	3	0	-3	6	15	9	19	-8	2	7	31	-15	5	17	19	100	10	25	19	6	10	8	21	-3	27	6	13	20	15	-17	4	2	9	16	10	13	30	13	3	1	-2	13	6	20	14	29	30	19	-1
20	33	15	20	9	18	25	5	16	25	2	20	25	24	12	7	-15	32	41	10	100	2	26	12	13	24	22	11	19	10	3	29	5	19	-7	-8	20	0	25	-31	27	27	8	-5	-6	-3	41	9	25	28	3	7	11
21	19	-5	15	21	31	-20	19	7	12	19	2	14	-3	17	-3	15	24	19	25	2	100	2	3	9	2	-1	-13	14	2	11	11	8	-11	29	11	-10	7	17	3	-7	-7	13	5	-2	28	26	17	28	22	-3	28	16
22	8	41	4	28	-13	19	0	23	30	1	-19	-2	9	7	21	24	29	29	19	26	2	100	5	1	32	41	27	32	33	11	24	16	-27	6	8	37	35	22	38	8	22	3	11	9	-2	32	27	15	45	22	0	18
23	7	12	1	9	14	-10	0	1	9	-8	1	-1	0	-4	18	-6	4	4	6	12	3	5	100	-1	6	-5	11	-12	-2	10	6	-10	14	9	-21	6	11	-2	5	-13	17	-5	-30	22	22	-2	-2	15	-5	3	-1	19
24	-6	9	37	38	17	10	29	-5	17	14	11	43	11	6	-1	13	15	20	10	13	9	1	-1	100	10	26	17	16	47	-10	28	21	24	15	1	17	5	16	11	20	-4	19	21	7	4	35	17	13	21	35	13	17
25	21	34	21	41	15	-8	17	21	4	3	0	-7	21	-5	18	25	42	17	8	24	2	32	6	10	100	43	25	10	32	5	25	12	11	22	0	11	31	20	7	27	13	17	25	14	11	26	21	22	19	13	10	9
26	31	28	15	39	20	21	11	35	19	12	23	19	46	20	19	22	37	39	21	22	-1	41	-5	26	43	100	47	27	56	10	34	23	2	12	5	27	48	19	19	34	15	33	18	24	23	39	17	20	47	43	49	43
27	14	20	-6	31	13	10	17	21	31	-5	0	21	25	7	29	16	19	17	-3	11	-13	27	11	17	25	47	100	13	35	-3	23	26	-1	25	8	20	10	19	15	17	15	35	28	3	12	23	16	26	32	17	20	21
28	21	19	19	27	3	5	12	17	26	-7	5	0	12	5	11	21	27	12	27	19	14	32	-12	16	10	27	13	100	18	3	25	33	-9	8	8	34	1	33	5	6	0	5	-5	-10	1	45	23	17	44	36	5	44
29	24	21	38	59	29	14	6	35	35	11	0	16	36	17	33	17	35	15	6	10	2	33	-2	47	32	56	35	18	100	9	40	24	16	35	16	12	43	28	17	39	23	33	17	30	33	38	27	26	35	37	36	36
30	3	-15	3	5	9	-8	3	26	12	8	-17	-12	12	-2	-19	13	11	-2	13	3	11	11	10	-10	5	10	-3	3	9	100	-3	14	2	0	-12	-4	21	0	6	8	25	12	-25	-4	12	18	18	14	5	18	23	-6
31	22	19	36	37	21	-11	8	9	26	11	1	15	34	29	34	8	22	21	20	29	11	24	6	28	25	34	23	25	40	-3	100	14	-1	38	-2	16	24	30	8	15	-7	18	15	8	21	49	12	27	43	20	29	18
32	37	12	14	28	18	18	5	18	24	14	2	9	-1	13	2	24	8	-9	15	5	8	16	-10	21	12	23	26	33	24	14	14	100	-1	24	0	7	-9	5	2	24	13	27	25	-20	0	29	21	5	29	29	-1	24
33	7	-2	-12	14	13	14	16	2	9	21	30	12	21	-1	9	-31	-12	15	-17	19	-11	-27	14	24	11	2	-1	-9	16	2	-1	-1	100	-6	-12	15	-11	25	-7	7	20	20	-7	-1	-4	10	-2	15	-9	4	14	23
34	11	19	19	44	33	-11	12	37	3	-4	-17	-5	11	26	17	26	27	12	4	-7	29	6	9	15	22	12	25	8	35	0	38	24	-6	100	15	-19	17	22	10	19	11	31	28	9	26	24	36	22	42	27	16	30
35	2	18	16	32	20	8	24	15	-7	-1	-24	-3	-6	17	-3	18	11	13	2	-8	11	8	-21	1	0	5	8	8	16	-12	-2	0	-12	15	100	-3	0	-1	32	14	8	-5	12	-3	10	3	1	-15	3	2	5	9
36	-1	15	-2	10	-10	25	5	-15	13	-21	-1	8	16	2	7	-2	7	30	9	20	-10	37	6	17	11	27	20	34	12	-4	16	7	15	-19	-3	100	13	21	1	0	19	6	-8	-10	-1	11	8	9	30	15	5	25
37	-5	29	12	30	-2	1	4	27	4	-6	-21	-24	15	5	19	25	33	19	16	0	7	35	11	5	31	48	10	1	43	21	24	-9	-11	17	0	13	100	10	21	14	12	15	6	28	22	22	17	26	16	7	29	22
38	20	25	22	37	7	10	29	18	18	-7	-11	3	23	23	2	8	25	20	10	25	17	22	-2	16	20	19	19	33	28	0	30	5	25	22	-1	21	10	100	6	24	6	17	11	-5	24	27	26	40	19	-3	16	33
39	-15	18	-2	29	-3	-12	8	12	7	9	-15	-1	-5	6	-9	12	7	0	13	-31	3	38	5	11	7	19	15	5	17	6	8	2	-7	10	32	1	21	6	100	-5	-2	9	18	35	22	7	15	-6	7	23	6	11
40	26	20	26	23	11	29	-4	11	-7	2	1	-3	-3	20	-22	12	30	15	30	27	-7	8	-13	20	27	34	17	6	39	8	15	24	7	19	14	0	14	24	-5	100	1	33	25	14	15	-3	23	3	30	32	30	-5
41	17	-10	-7	5	25	20	15	44	19	-6	-17	7	23	17	13	7	-3	17	13	27	-7	22	17	-4	13	15	15	0	23	25	-7	13	20	11	8	19	12	6	-2	1	100	12	-14	-1	14	14	17	18	11	5	7	21
42	1	-5	2	15	25	-1	17	20	15	8	39	3	5	44	1	12	6	13	3	8	13	3	-5	19	17	33	35	5	33	12	18	27	20	31	-5	6	15	17	9	33	12	100	30	11	29	14	19	33	35	32	26	31
43	-12	13	-7	17	3	22	0	13	-3	5	20	-6	-2	19	1	12	17	20	1	-5	5	11	-30	21	25	18	28	-5	17	-25	15	25	-7	28	12	-8	6	11	18	25	-14	30	100	-1	5	3	8	-1	21	13	1	11
44	4	27	18	15	17	-3	-28	-5	-2	-4	8	-14	11	-4	-1	8	13	-1	-2	-6	-2	9	22	7	14	24	3	-10	30	-4	8	-20	-1	9	-3	-10	28	-5	35	14	-1	11	-1	100	25	3	15	15	9	14	28	2
45	25	-2	13	25	26	-8	11	29	12	6	-4	1	7	24	4	24	12	5	13	-3	28	-2	22	4	11	23	12	1	33	12	21	0	-4	26	10	-1	22	24	22	15	14	29	5	25	100	18	32	41	11	18	37	21
46	39	27	28	51	25	16	31	40	41	31	4	24	40	21	22	17	31	30	6	41	26	32	-2	35	26	39	23	45	38	18	49	29	10	24	3	11	22	27	7	-3	14	14	3	3	18	100	49	37	36	30	28	43
47	24	21	28	36	21	21	20	19	27	25	-18	6	16	17	-25	35	31	9	20	9	17	27	-2	17	21	17	16	23	27	18	12	21	-2	36	1	8	17	26	15	23	17	19	8	15	32	49	100	30	32	37	31	26
48	14	15	2	16	30	-7	10	20	28	8	-6	22	17	25	27	21	16	10	14	25	28	15	15	13	22	20	26	17	26	14	27	5	15	22	-15	9	26	40	-6	3	18	33	-1	15	41	37	30	100	30	8	28	17
49	11	38	10	33	33	26	-3	17	14	3	9	18	22	34	9	28	49	35	29	28	22	45	-5	21	19	47	32	44	35	5	43	29	-9	42	3	30	16	19	7	30	11	35	21	9	11	36	32	30	100	48	23	28
50	9	23	11	23	15	3	1	24	24	30	20	23	8	36	-4	3	32	29	30	3	-3	22	3	35	13	43	17	36	37	18	20	29	4	27	2	15	7	-3	23	32	5	32	13	14	18	30	37	8	48	100	26	26
51	27	6	10	26	28	-8	23	20	28	35	17	6	45	36	5	18	23	29	19	7	28	0	-1	13	10	49	20	5	36	23	29	-1	14	16	5	5	29	16	6	30	7	26	1	28	37	28	31	28	23	26	100	18
52	24	17	10	53	13	4	21	22	25	-1	29	0	31	32	10	20	21	19	-1	11	16	18	19	17	9	43	21	44	36	-6	18	24	23	30	9	25	22	33	11	-5	21	31	11	2	21	43	26	17	28	26	18	100

Appendix 16

Consumers factor scores — Factor 1

No.	Statement	Z-scores
48	Health promotion will not work unless one has the personal d	2.122
23	Most smokers are aware of the health risks of smoking but th	2.042
25	Children in Qatar order fast food to be delivered to their h	1.987
26	The younger generation is learning bad habits from adults, s	1.638
28	The terms ‘The Qatar Pound’ and ‘The Qatar Stone’ are well k	1.463
12	When I understand the value of a certain behaviour I am more	1.460
1	TV and social media are the best mediums for raising awarene	1.419
20	In Qatar, people care more about the way they look than they	1.363
36	The hot weather prevents me from integrating walking into my	1.349
9	There is very little communication of health-related events	1.347
37	Lack of pedestrian infrastructure prevents me from integrati	1.176
35	Communication of health information in Qatar is not clear, s	0.877
42	Anti-smoking campaigns targeted at Qataris will not be effec	0.721
3	Communication between healthcare institutions and the commu	0.660
4	The poor quality of health promotion campaigns in Qatar indi	0.486
40	Anti-smoking ‘fear advertising’ will not work in Qatar, posi	0.469
46	Expensive gym subscriptions prevent people from exercising	0.438
41	Smoking *argela* and *shisha* has become very popular among	0.216
2	I am not aware of any health promotional campaigns and canno	0.187
19	The level of health literacy of Qatari women is very low	0.155
45	There is a clear lack of healthy food outlets in Qatar	0.086
44	Schools adherence to serving healthy foods in their canteens	0.049
52	The ‘*Kulluna*’ health communication campaign failed to make m	0.026
16	Organisations need to see tangible benefits and results from	0.006
29	The culture in Qatar relates bad health and illness to fate	0.004
6	A humanitarian approach to healthcare campaigns that makes t	-0.020
38	Traffic is an obstacle that prevents people from playing spo	-0.030
39	Neighborhoods need more public spaces to allow people to int	-0.036

7	Information about health campaigns and events usually only a		-0.072
13	Health promotional campaigns launched in Qatar are never fol		-0.092
51	The '*Kulluna*' health communication campaign did not provide		-0.111
17	Twitter is the best medium for communicating health-related		-0.187
56	The 'Your Health First' campaign has created general awarene		-0.286
11	Health promotion campaigns alone can make little or no diffe		-0.290
5	Health promotion campaigns in Qatar are quite old fashioned,		-0.349
53	I am not aware of the anti-smoking' campaign that is curren	-0.349	
21	Changing the lifestyles of older people is very difficult an		-0.356
54	The 'Think Pink' walk, 'Wheels and Heels' and initiatives ab		-0.374
57	The '*Kulluna*' health communication campaign was too generali		-0.383
33	Sports facilities in Qatar are built to meet the requirement		-0.442
22	People in Qatar don't look after their health because they k		-0.447
27	The typical Qatari lifestyle is part of a deeply rooted cult		-0.463
10	Health communication professionals in Qatar are generally not		-0.481
18	Most Qataris believe that support from hospital is all they		-0.612
15	Campaigns that encourage people to change to a healthy lifes		-0.655
49	There is too much conflicting information about which foods		-0.715
30	Mass communication techniques are not effective in Qatar bec		-0.843
34	The traditional Qatari cultural dress does not encourage peo		-0.897
50	People in Qatar are too busy to prepare healthy food to eat		-1.010
31	'National Sports Day' is a one of Qatar's yearly events. It		-1.023
24	"I love my child so I prefer not to restrain him in a car se		-1.279
47	Sports events are widely advertised in Qatar, but I am not i		-1.419
14	I feel that most healthcare campaigns are not targeted at me		-1.461
32	Religious practices such as timings of prayers, fasting and		-1.468
55	I participated in the 'Step into Health' campaign that encou		-1.711
43	Non-smoking places are not respected or enforced in Qatar		-1.928
8	I don't want to change my lifestyle, so the messages of heal		-1.960

Appendix 17

Consumers factor scores — Factor 2

No.	Statement	Z-scores	
46	Expensive gym subscriptions prevent people from exercising	2.693	
37	Lack of pedestrian infrastructure prevents me from integrati	2.279	
39	Neighborhoods need more public spaces to allow people to int	1.601	
12	When I understand the value of a certain behaviour I am more		1.543
3	Communication between healthcare institutions and the commu	1.495	
11	Health promotion campaigns alone can make little or no diffe	1.409	
36	The hot weather prevents me from integrating walking into my	1.282	
48	Health promotion will not work unless one has the personal d	1.129	
43	Non-smoking places are not respected or enforced in Qatar	1.084	
6	A humanitarian approach to healthcare campaigns that makes t	1.073	
15	Campaigns that encourage people to change to a healthy lifes	1.002	
30	Mass communication techniques are not effective in Qatar bec	0.899	
4	The poor quality of health promotion campaigns in Qatar indi	0.805	
10	Health communication professionals in Qatar are generally not	0.751	
35	Communication of health information in Qatar is not clear, s	0.747	
13	Health promotional campaigns launched in Qatar are never fol	0.466	
23	Most smokers are aware of the health risks of smoking but th	0.397	
9	There is very little communication of health-related events	0.284	
2	I am not aware of any health promotional campaigns and canno	0.282	
57	The '*Kulluna*' health communication campaign was too generali	0.212	
5	Health promotion campaigns in Qatar are quite old fashioned,	0.169	
53	I am not aware of the anti-smoking campaign that is curren	0.138	
52	The '*Kulluna*' health communication campaign failed to make m	0.117	
18	Most Qataris believe that support from hospital is all they	0.077	
7	Information about health campaigns and events usually only a	0.048	
28	The terms 'The Qatar Pound' and 'The Qatar Stone' are well k	0.028	
49	There is too much conflicting information about which foods	-0.044	
19	The level of health literacy of Qatari women is very low	-0.044	

26	The younger generation is learning bad habits from adults, s	-0.062
54	The 'Think Pink' walk, 'Wheels and Heels' and initiatives ab	-0.125
16	Organisations need to see tangible benefits and results from	-0.200
34	The traditional Qatari cultural dress does not encourage peo	-0.269
25	Children in Qatar order fast food to be delivered to their h	-0.284
24	'I love my child so I prefer not to restrain him in a car se	-0.298
14	I feel that most healthcare campaigns are not targeted at me	-0.307
40	Anti-smoking 'fear advertising' will not work in Qatar, posi	-0.334
50	People in Qatar are too busy to prepare healthy food to eat	-0.355
51	The '*Kulluna*' health communication campaign did not provide	-0.476
1	TV and social media are the best mediums for raising awarene	-0.478
20	In Qatar, people care more about the way they look than they	-0.486
56	The 'Your Health First' campaign has created general awarene	-0.549
44	Schools adherence to serving healthy foods in their canteens	-0.577
38	Traffic is an obstacle that prevents people from playing spo	-0.639
41	Smoking *argela* and *shisha* has become very popular among	-0.666
31	'National Sports Day' is a one of Qatar's yearly events. It	-0.696
45	There is a clear lack of healthy food outlets in Qatar	-0.700
29	The culture in Qatar relates bad health and illness to fate	-0.805
33	Sports facilities in Qatar are built to meet the requirement	-0.875
55	I participated in the 'Step into Health' campaign that encou	-0.909
27	The typical Qatari lifestyle is part of a deeply rooted cult	-0.966
47	Sports events are widely advertised in Qatar, but I am not i	-1.019
17	Twitter is the best medium for communicating health-related	-1.201
22	People in Qatar don't look after their health because they k	-1.354
32	Religious practices such as timings of prayers, fasting and	-1.475
42	Anti-smoking campaigns targeted at Qataris will not be effec	-1.649
21	Changing the lifestyles of older people is very difficult an	-1.944
8	I don't want to change my lifestyle, so the messages of heal	-2.227

Appendix 18

Consumers factor scores — Factor 3

No.	Statement	Z-scores
48	Health promotion will not work unless one has the personal d	1.793
37	Lack of pedestrian infrastructure prevents me from integrati	1.746
12	When I understand the value of a certain behaviour I am more	1.684
25	Children in Qatar order fast food to be delivered to their h	1.469
7	Information about health campaigns and events usually only a	1.372
23	Most smokers are aware of the health risks of smoking but th	1.323
16	Organisations need to see tangible benefits and results from	1.187
43	Non-smoking places are not respected or enforced in Qatar	1.171
10	Health communication professionals in Qatar are generally not	1.121
39	Neighborhoods need more public spaces to allow people to int	1.090
9	There is very little communication of health-related events	0.969
41	Smoking *argela* and *shisha* has become very popular among	0.917
30	Mass communication techniques are not effective in Qatar bec	0.906
47	Sports events are widely advertised in Qatar, but I am not i	0.867
29	The culture in Qatar relates bad health and illness to fate	0.830
6	A humanitarian approach to healthcare campaigns that makes t	0.778
13	Health promotional campaigns launched in Qatar are never fol	0.749
1	TV and social media are the best mediums for raising awarene	0.699
45	There is a clear lack of healthy food outlets in Qatar	0.632
5	Health promotion campaigns in Qatar are quite old fashioned,	0.608
3	Communication between healthcare institutions and the commu	0.486
4	The poor quality of health promotion campaigns in Qatar indi	0.319
26	The younger generation is learning bad habits from adults, s	0.304
19	The level of health literacy of Qatari women is very low	0.292
52	The '*Kulluna*' health communication campaign failed to make m	0.156
53	I am not aware of the anti-smoking campaign that is curren	0.102
11	Health promotion campaigns alone can make little or no diffe	0.101
2	I am not aware of any health promotional campaigns and canno	0.098

40	Anti-smoking 'fear advertising' will not work in Qatar, posi	0.019
57	The '*Kulluna*' health communication campaign was too generali	-0.000
51	The '*Kulluna*' health communication campaign did not provide	-0.083
35	Communication of health information in Qatar is not clear, s	-0.140
18	Most Qataris believe that support from hospital is all they	-0.174
46	Expensive gym subscriptions prevent people from exercising	-0.175
17	Twitter is the best medium for communicating health-related	-0.196
56	The 'Your Health First' campaign has created general awarene	-0.196
20	In Qatar, people care more about the way they look than they	-0.408
21	Changing the lifestyles of older people is very difficult an	-0.416
44	Schools adherence to serving healthy foods in their canteens	-0.591
34	The traditional Qatari cultural dress does not encourage peo	-0.617
54	The 'Think Pink' walk, 'Wheels and Heels' and initiatives ab	-0.660
33	Sports facilities in Qatar are built to meet the requirement	-0.744
28	The terms 'The Qatar Pound' and 'The Qatar Stone' are well k	-0.864
27	The typical Qatari lifestyle is part of a deeply rooted cult	-0.909
32	Religious practices such as timings of prayers, fasting and	-0.912
42	Anti-smoking campaigns targeted at Qataris will not be effec	-1.022
15	Campaigns that encourage people to change to a healthy lifes	-1.081
31	'National Sports Day' is a one of Qatar's yearly events. It	-1.093
38	Traffic is an obstacle that prevents people from playing spo	-1.130
55	I participated in the 'Step into Health' campaign that encou	-1.142
49	There is too much conflicting information about which foods	-1.302
22	People in Qatar don't look after their health because they k	-1.468
8	I don't want to change my lifestyle, so the messages of heal	-1.566
14	I feel that most healthcare campaigns are not targeted at me	-1.567
50	People in Qatar are too busy to prepare healthy food to eat	-1.726
36	The hot weather prevents me from integrating walking into my	-1.795
24	"I love my child so I prefer not to restrain him in a car se	-1.810

Appendix 19

Consumer factor scores — Factor 4

No.	Statement	Z-scores
48	Health promotion will not work unless one has the personal d	1.677
44	Schools adherence to serving healthy foods in their canteens	1.661
13	Health promotional campaigns launched in Qatar are never fol	1.519
18	Most Qataris believe that support from hospital is all they	1.504
6	A humanitarian approach to healthcare campaigns that makes t	1.422
16	Organisations need to see tangible benefits and results from	1.315
53	I am not aware of the anti-smoking campaign that is curren	1.243
23	Most smokers are aware of the health risks of smoking but th	1.153
14	I feel that most healthcare campaigns are not targeted at me	1.075
30	Mass communication techniques are not effective in Qatar bec	0.983
12	When I understand the value of a certain behaviour I am more	0.932
20	In Qatar, people care more about the way they look than they	0.835
41	Smoking *argela* and *shisha* has become very popular among	0.834
15	Campaigns that encourage people to change to a healthy lifes	0.834
1	TV and social media are the best mediums for raising awarene	0.812
25	Children in Qatar order fast food to be delivered to their h	0.753
36	The hot weather prevents me from integrating walking into my	0.749
24	'I love my child so I prefer not to restrain him in a car se	0.681
39	Neighborhoods need more public spaces to allow people to int	0.677
43	Non-smoking places are not respected or enforced in Qatar	0.565
26	The younger generation is learning bad habits from adults, s	0.537
54	The 'Think Pink' walk, 'Wheels and Heels" and initiatives ab	0.359
7	Information about health campaigns and events usually only a	0.353
19	The level of health literacy of Qatari women is very low	0.221
3	Communication between healthcare institutions and the commu	0.188
10	Health communication professionals in Qatar are generally not	0.049
38	Traffic is an obstacle that prevents people from playing spo	0.022
17	Twitter is the best medium for communicating health-related	-0.038

52	The '*Kulluna*' health communication campaign failed to make m	-0.100
57	The '*Kulluna*' health communication campaign was too generali	-0.103
4	The poor quality of health promotion campaigns in Qatar indi	-0.122
11	Health promotion campaigns alone can make little or no diffe	-0.176
2	I am not aware of any health promotional campaigns and canno	-0.185
46	Expensive gym subscriptions prevent people from exercising	-0.215
9	There is very little communication of health-related events	-0.248
27	The typical Qatari lifestyle is part of a deeply rooted cult	-0.354
51	The '*Kulluna*' health communication campaign did not provide	-0.386
49	There is too much conflicting information about which foods	-0.396
35	Communication of health information in Qatar is not clear, s	-0.406
40	Anti-smoking 'fear advertising" will not work in Qatar, posi	-0.423
31	'National Sports Day" is a one of Qatar's yearly events. It	-0.454
45	There is a clear lack of healthy food outlets in Qatar	-0.462
28	The terms 'The Qatar Pound" and 'The Qatar Stone" are well k	-0.492
56	The 'Your Health First' campaign has created general awarene	-0.513
50	People in Qatar are too busy to prepare healthy food to eat	-0.550
22	People in Qatar don't look after their health because they k	-0.798
29	The culture in Qatar relates bad health and illness to fate	-0.808
33	Sports facilities in Qatar are built to meet the requirement	-0.908
8	I don't want to change my lifestyle, so the messages of heal	-0.975
5	Health promotion campaigns in Qatar are quite old fashioned,	-1.112
37	Lack of pedestrian infrastructure prevents me from integrati	-1.321
32	Religious practices such as timings of prayers, fasting and	-1.617
34	The traditional Qatari cultural dress does not encourage peo	-1.682
55	I participated in the 'Step into Health" campaign that encou	-1.734
42	Anti-smoking campaigns targeted at Qataris will not be effec	-1.760
21	Changing the lifestyles of older people is very difficult an	-2.210
47	Sports events are widely advertised in Qatar, but I am not i	-2.409

Appendix 20

Consumer factor scores — Factor 5

No.	Statement	Z-scores
11	Health promotion campaigns alone can make little or no diffe	2.560
46	Expensive gym subscriptions prevent people from exercising	2.073
39	Neighborhoods need more public spaces to allow people to int	2.040
45	There is a clear lack of healthy food outlets in Qatar	1.602
48	Health promotion will not work unless one has the personal d	1.384
1	TV and social media are the best mediums for raising awarene	1.303
20	In Qatar, people care more about the way they look than they	1.173
30	Mass communication techniques are not effective in Qatar bec	1.168
25	Children in Qatar order fast food to be delivered to their h	1.074
6	A humanitarian approach to healthcare campaigns that makes t	1.047
41	Smoking *argela* and *shisha* has become very popular among	0.945
23	Most smokers are aware of the health risks of smoking but th	0.813
36	The hot weather prevents me from integrating walking into my	0.799
16	Organisations need to see tangible benefits and results from	0.633
21	Changing the lifestyles of older people is very difficult an	0.569
10	Health communication professionals in Qatar are generally not	0.439
19	The level of health literacy of Qatari women is very low	0.400
15	Campaigns that encourage people to change to a healthy lifes	0.364
26	The younger generation is learning bad habits from adults, s	0.352
35	Communication of health information in Qatar is not clear, s	0.347
3	Communication between healthcare institutions and the commu	0.326
12	When I understand the value of a certain behaviour I am more	0.316
57	The '*Kulluna*' health communication campaign was too generali	0.277
13	Health promotional campaigns launched in Qatar are never fol	0.264
34	The traditional Qatari cultural dress does not encourage peo	0.237
31	'National Sports Day" is a one of Qatar's yearly events. It	0.174
40	Anti-smoking 'fear advertising" will not work in Qatar, posi	0.160
27	The typical Qatari lifestyle is part of a deeply rooted cult	0.100

29	The culture in Qatar relates bad health and illness to fate	0.095
44	Schools adherence to serving healthy foods in their canteens	0.037
54	The 'Think Pink' walk, 'Wheels and Heels" and initiatives ab	-0.051
38	Traffic is an obstacle that prevents people from playing spo	-0.144
37	Lack of pedestrian infrastructure prevents me from integrati	-0.239
5	Health promotion campaigns in Qatar are quite old fashioned,	-0.327
47	Sports events are widely advertised in Qatar, but I am not i	-0.393
52	The '*Kulluna*' health communication campaign failed to make m	-0.423
24	"I love my child so I prefer not to restrain him in a car se	-0.430
14	I feel that most healthcare campaigns are not targeted at me	-0.478
49	There is too much conflicting information about which foods	-0.540
17	Twitter is the best medium for communicating health-related	-0.592
18	Most Qataris believe that support from hospital is all they	-0.669
9	There is very little communication of health-related events	-0.690
56	The 'Your Health First' campaign has created general awarene	-0.777
53	I am not aware of the anti-smoking campaign that is curren	-0.838
55	I participated in the 'Step into Health" campaign that encou	-0.898
4	The poor quality of health promotion campaigns in Qatar indi	-0.920
22	People in Qatar don't look after their health because they k	-1.042
50	People in Qatar are too busy to prepare healthy food to eat	-1.099
43	Non-smoking places are not respected or enforced in Qatar	-1.101
32	Religious practices such as timings of prayers, fasting and	-1.150
51	The '*Kulluna*' health communication campaign did not provide	-1.191
28	The terms 'The Qatar Pound" and 'The Qatar Stone" are well k	-1.282
8	I don't want to change my lifestyle, so the messages of heal	-1.301
7	Information about health campaigns and events usually only a	-1.467
33	Sports facilities in Qatar are built to meet the requirement	-1.485
42	Anti-smoking campaigns targeted at Qataris will not be effec	-1.762
2	I am not aware of any health promotional campaigns and canno	-1.784

Appendix 21

Providers follow-up interviews

1 "We are doing well – but there is room to improve"

Q Sort	Comments
7215	*Promoting health is not a new idea as there have been campaigns for many years and the public is generally aware of them, but their impact is not certain*
7244	*Qatar is doing all it can to promote health and provide services. However, the continuous effort in doing so is very limited*
7226	*Most, if not all, of the conferences and events organised by healthcare entities are disease focused, as there is a public demand for this*
7312	*Focus is on disease management more than prevention", although pointing out that many medical lectures and events are open to the general public*
7233	*The focus of healthcare communication should be more on the prevention than cure. We have many hospitals but no places to exercise*
7275	*This is quite obvious in Qatar through the sheer number of hospitals and health facilities that are being built*
7250	*Health communication is very noticeable everywhere in Qatar through all media outlets*
7228	*Health awareness campaigns are supported - cancer public awareness promotion for example - cancer public health promotion and prevention awareness has been a strategy for at least three years now. However, I think a national health awareness strategy that promotes healthy lifestyles is needed and not the unplanned isolated efforts we see today*
7215	*Qatar has no real public health department to look at statistics. To enable, for example, the development of a national awareness strategy, you just have to start from zero*
7194	*Research is the key to the foundation of growth. From research findings you get an indication of what are the issues and where can you put your resources. We are always doing research*
7272	*Many organisations share programs now and work closely with the Qatari community*
7227	*The Kulluna campaign was designed and operated by healthcare providers that directly interact with the community. It had consistent messages, not a one-off message*
7206	*I think it's important to note that, while Qatar is doing its best to promote healthy lifestyles, perhaps having too many campaigns dilutes messages and confuses audiences*

Q Sort	Comments
7347	*I work in the hospital but I don't know what to make of the messages in the ads and who is sending what message*
7250	*Cross-government coordination only appears most active when they try to make use of the amazing facilities they have in Qatar*
7206	*I think there are already plenty of committees set up, and unfortunately very little results, therefore there is no need to have more*
7251	*Members of the public have the right to choose their eating habits, and government has no right to ban fast food*
7345	*People have independent views on healthy eating*
7228	*Things which I consider healthy may be considered unhealthy for another, and vice versa*
7251	*People in the communication and education fields know their responsibilities in regards to public health*
7250	*Sports facilities, and particularly the Asian Games sports facilities in Aspire Zone, must be advertised more and made available to the public*

2 "We are not doing that well – we must do better"

Q Sort	Comments
7193	*There is no common definition, perhaps defining health literacy at a national level was the first step. The quality of health communication campaigns is generally poor*
7322	*Large parts of the expat population are not getting the message through advertised communication! I bet that goes with the locals, too*
7344	*Campaigns are ineffective in their current state. A multi-pronged approach is needed. Communications should be tailored for specific target audiences, rather than operating from a 'one size fits all strategy. There was aLack of effective collaboration and bureaucracy between the Supreme Council of Health (SCH), Hamad Medical Corporation (HMC) and Primary Healthcare (PHCC). This is due to each entity pushing their own health agenda. Government intervention is required to help people to help themselves. I think different entities need to assess, recognise mistakes and regroup*
7206	*We need forward thinking, but our campaigns are always reactive to an incident rather than proactive. Quick fixes and results are always a priority, making it difficult to deliver tangible results*
7283	*Most campaigns are on radio, that is easily missed if you don't listen, and a lot is in Arabic, when a vast majority of the population does not understand Arabic*
7233	*Co-ordination and a long-term plan are essential to effective planning, budget spend and effectiveness of messages*

Q Sort	Comments
7250	*Healthcare awareness is a collaborative work effort that requires commitment and dedication from many entities, starting with government's related ministries and including hospitals, schools and public social and family associations. The task is huge*
7194	*Research is the key to a foundation of growth. From research findings you get an indication of what are the issues and where can you put your resources. Education is the next step*
7312	*I am not aware of any research investigating health literacy in Qatar, or any research related to lifestyle choices*

3 "How can we do better? Coordination is the key to possible solutions"

Q Sort	Comments
7194	*Accessing various community groups holds the key to success of healthcare promotion. People like school teachers, community leaders and spokespersons have access to the community – they are the community gatekeepers and as such we need to work with and through them to deliver messages. Research is the key to a foundation of growth*
7233	*Coordination and a long-term vision are essential to effective planning, (and it is) also important to understand the various backgrounds and economic status of people to choose better ways to send the message*
7250	*Healthcare awareness is a collaborative work that requires commitment and dedication from many entities, starting with the government's related ministries, and including hospitals and schools, as well as public, social and family associations. The task is huge*
7321	*We need to make collaboration and coordination a priority, but we need to understand who we targeting, too*
7275	*The focus of healthcare communication should be more on the prevention than cure. We need to coordinate our messages and reach the public in an effective manner*
7283	*Raising awareness, particularly on health issues, should be a collaborative effort to keep stakeholders engaged in programs or campaigns. There should be a unified goal and implementation plans to work on, and the same messages*
7226	*Co-ordination is essential to effective planning and budget spend*
7343	*Different sectors need to work together to promote healthier lifestyles under the guidance of one supreme health promotion body to ensure coordination and consistency*
7193	*Food labelling in Qatar should include at least nutrition facts, portion sizes and calorie count*
7190	*I support having one committee that will overlook and mainly coordinate the communication work of all healthcare institutions. I believe they should all deliver on the*

Q Sort	Comments
	same strategy. I think a good health communication strategy set by the Supreme Council of Health and followed by all healthcare institutions, with the help of marketing and communication specialists, would give a big impact. Banning unhealthy food will not solve the problem. However, having the right education could be more efficient
7206	*I think there are already plenty of committees set up, and unfortunately very little result. Therefore, there is no need to have more*
7344	*Sport, such as swimming, and healthy food in school canteens, anti-smoking awareness campaigns for teenagers, no vending machines [dispensing] unhealthy food in public places, and the avoidance of contradicting messages, is a good start*
7312	*Awareness programs in schools and annual health check-ups, if made mandatory, will solve most health issues. Family and culture are the core of the problem and the key to the solution*
7244	*Using strong family bonds to encourage healthier lifestyles is a natural fit for Qataris." Health providers in this theme group advocated targeting mothers in order to best influence children from the earliest age*
7283	*Mothers have the most influence on their children, and if they have knowledge about better lifestyle choices, they can impart it to their children from a very early age, and it will become a norm for that child*
7272	*A collaborative approach with the hospital and community is important to increasing awareness. Health campaigns should be targeted to all - including cooks, people who care for children, nannies and housekeepers*
7345	*While some people believe that social media is now the best way to reach people anywhere and anytime, in promoting lifestyle campaigns, we should consider all types of media to make sure that the message reaches all categories of people in Qatar*
7346	*Health communication campaigns should target individual companies to raise awareness at work place level*
7217	*It is more important to utilise money and energy on constructing parks across all locations in Qatar. Walking is the most affordable exercise people can adopt!. Qatar has access to some of the best sports facilities. These need to be utilised by health institutions to build a culture of regular exercise*
7281	*Stadium sports facilities (gym, pool etc.) should be free for everyone. People should know about it too*

Appendix 22

Consumers follow-up interviews

1 "Can do – personal responsibility and willingness are the keys"

Q Sort	Comments
7246	*Healthy dieting is a self-discipline issue and is not related to religious or culture issues, or any other excuse lazy people come up with*
7225	*Healthy lifestyle is a state of mind and self-discipline; health education does not change the state of mind as much as personal drive does. Why give up on older people? They can still benefit and show an example to younger generations. Change is a long term project, particularly when existing behaviour and attitudes are so culturally ingrained. This will require a long term strategy, with regular reinforcement mechanisms for all age groups*
7243	*The first step which motivates me to be willing to change my lifestyle is to understand why it is better for me to do so*
7258	*The key to changing behaviour is to generate awareness, and create understanding of the influence and impact of lifestyle and habit change on health. Benefits of requested change need to be clearly identified so the recipient understands 'what's in it for me'*
7203	*I think education, beginning with nursery and primary schools for instance, should be given more emphasis regarding health awareness*
7293	*Every bad cultural habit can be changed, but that requires working on the younger generation. The older generation should educate and set a good example for the young, as they are more aware of the value of adopting a healthier lifestyle than the younger generation*
7306	*Older people are more health conscious, therefore they need to utilise their knowledge to help the young and set a good example for them*
7258	*Do children in Qatar understand what a healthy lifestyle consists of? Can they make the right choices? Are they encouraged by their families to make the right choices when it comes to food and exercise? These are the questions that need to be asked and addressed first*
7252	*That health bodies needed to continue to motivate members of the public, the more you offer healthy lifestyle advice, the more people will follow. If you really want something, you just do it. Your mind is strong. The climate, the claim of expensive gyms, are just excuses to not go for your goal*
7216	*Traffic is not an excuse for not playing sports. That is a poor excuse*
7290	*It's all about willingness*

Q Sort	Comments
7311	*I do not think fasting or religious practices are obstacles; in fact, fasting is proven to be healthy according to recent studies*
7208	*No one is too busy to eat well. At the end of the day, you could go to Subway for instance. Information about healthy food is always available. Google is always there to help*

2 "Can't do- there are too many barriers"

Q Sort	Comments
7196	*Fast food ordering is very frequent and there is heavy dependence on cars even during nice weather, so less walking. Activities on daily mall visits are limited to eating and lazy entertainment options - restaurants and cinemas. Those are all bad habits, and have become part of a culture which is very difficult to change*
7260 & 7252	*The local lifestyle encouraged obesity, because there was not much else to do apart from eating.*
7290	*It was extremely dangerous to walk in Qatar at any time of the year due to the nature of the traffic*
7248	*People feel like they can flout the rules. Law enforcement is mediocre at best and that's why a lot of people who break the law don't take it seriously, because they know they will not be reprimanded. I wish there were more safe, pedestrian-friendly areas that are easily accessible to neighborhoods*
7216	*I do want to walk, on a more regular basis, but the lack of infrastructure and busy roads prevent me. It's very dangerous walking near the road*
7203	*The continuous roadwork and lack of walking paths made it almost impossible to take up walking as regular exercise in Qatar*
7197, 7200, 7338, & 7199	*Most residential parts are very congested, resulting in less public spaces for walking*
7328	*Largely as a result of living in this environment, people in Qatar exercise only when their doctor advised them or they became obese*
7304	*That it was too hot to walk outdoors during Qatar's long summer, and the air-conditioned malls did not provide a favorable walking environment either. As well, gym memberships were costly so residents were dissuaded from joining*
7210	*I have gone through many gyms, and many are very expensive*
7320	*Expensive gym subscriptions prevent people from exercising*
7317	*Sports facilities like gymnasium and parks are limited and expensive*

Q Sort	Comments
7293	*Especially at busy schedule times, when people need to grab a meal on the go, people always end up eating fast food*
7311	*Fast food is easy, accessible and can be delivered*
7200	*House maids, drivers, and servants are everywhere; such manpower is very cheap. People rely on them in every action*

3 "Attitudes towards health promotion campaigns"

Q Sort	Comments
7210	*I am not aware of any health campaigns, and I have been living in Qatar for a long time now. Maybe I did not give any attention to them*
7327	*While he had noticed some health-related messages on roadside signs while driving, he did not think they were aimed at him*
7268	*Health-related messages needed to be presented in a different way*
7202	*To spread awareness of healthy lifestyles, health bodies need to start with well-planned and integrated public media campaigns. There are currently too many messages. I don't know what they mean and who puts them in public places*
7196	*There were many small health promotion campaigns that took place, but their impact remained limited*
7248	*Between health institutions and decision makers and the general public, particularly the younger people. Innovative awareness methods are not adopted and the campaigns are so badly done*
7330	*That communication between healthcare institutions and the community is weak in Qatar*
7304	*Campaigns should be designed to engage people at all levels and nationalities. Health campaigns should target both the expatriates and Qatari people*
7319	*The "Kullina" campaign failed to make an impact as it was not communicated effectively. A thorough follow-up of health campaigns is very important*

4 "Closing the gap through intervention, community engagement and better targeting"

Q Sort	Comments
7352	*Teaching children basic health information and healthy practices in schools from an early age, and creating a core and daily health subject in all schools, will ensure that we will have healthy lifestyle practices across society in the future. I will not adopt any health promotion suggestion unless I am convinced Health*

Q Sort	Comments
	promotion needs to be convincing and well communicated, illustrated in pictures and simple language
7271	*The younger generation is learning bad habits from adults. As the older generations have some bad health habits, the younger generation will learn from them*
7306	*Adults needed to be role models for younger people in terms of following good and healthy lifestyle behaviour*
7327	*Many school canteens need to be properly monitored by authorities and health organisations to ensure that they are selling healthy food to kids. Looking to the theoretical knowledge about health and lifestyle alone is not effective - they need to engage and encourage daily practice, too*
7203	*I think health awareness and education should begin at nursery and primary school! Also, parents must ensure they are monitoring their children's lunchboxes and general food intake, not leaving this to maids and other paid help such as nannies*
7245	*Parents must monitor what their children eat when left with nannies all day*
7311	*Accessibility to cheap, packaged or fast food is the main reason why children are eating unhealthily. Many of them are obese these days. They need to be educated to choose better from a very young age*
7320	*I see health messages everywhere, but am not sure if they are meant for me. They seem to be aimed at locals judging from the pictures*
7326	*My friend told me about a new health ad on the radio, but I don't listen to the radio at the time of day the ad is usually on*
7342	*There should be campaigns targeting mothers, and others targeting children in schools, and others targeting women at a young age*
7207	*That campaigns targeting young women and mothers were especially needed*
7290	*As mothers can influence children about the healthy food they should eat, we need to target mothers*
7198	*I need to feel that whoever is lecturing me about healthy lifestyles is a real professional person in the field, so I can believe and follow. I need a trusted source of information*
7306	*Correct and honest information should be given to the public, but not by advertising in streets*
7212	*Health professionals need to be more active in the community to provide added value*
7319	*A thorough follow-up of health campaigns is very important, especially in a community environment*

Q Sort	Comments
7246	*We need expert health people who understand how to communicate to all the diverse public. Health awareness exercises should be done by health professionals of different cultures who understand specific cultures and how to influence people from each cultural category*
7303	*It's not hard to encourage better and healthier lifestyles amongst the Qatari culture*
7293	*I think the best way to reach the local community is via members of the local community*
7342	*Health campaigns need to be measured, as I don't think they give us value*
7202	*To spread awareness of healthy lifestyles, they need to start with well-researched and well-planned integrated public media campaigns*
7199 & 7248	*Research could lead to ideas for new and innovative ways of communication*
7338	*TV and social media were the best mediums, because they were popular across all age groups*
7316	*I prefer email, newsletter and radio as a way of communication*
7330	*I am an advocate of Twitter*
7258 & 7212	*Support government subsidies as a way to encourage people to adopt a healthier lifestyle*
7207	*I suggest an increase in healthy food outlets in Qatar*
7293	*Health departments should establish research programs and yearly surveys to find out why people are making unhealthy lifestyle choices*
7211	*I would be interested in registering for sports activities in Qatar, but not many programs are available*
7326	*Sports events are not widely advertised, and if they were I would be interested*
7271	*I usually hear about events in the newspaper the next day - they never reach me in time*
7323	*Health promotion should create the willingness to change first. Without emphasising the value of adopting more active and healthy lifestyle choices first, campaigns alone can make little or no difference I don't think health promotion is reaching people; authorities need to understand why what they do now is not effective and change it*

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