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## The effects of the Wigan Borough Healthy Business Award on the dietary attitudes and behaviours of awardees

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The effects of the Wigan Borough Healthy Business Award on the  
dietary attitudes and behaviours of awardees

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Family and friends.

## **Abstract**

Aim: The study aims to investigate whether the Wigan Borough Healthy Business Award (HBA) influences the dietary attitudes and behaviours of awardees.

Objectives are to:

- investigate the dietary attitudes of awardees prior to the HBA intervention.
- investigate the dietary behaviours of awardees prior to the HBA intervention.
- investigate the dietary attitudes of awardees post intervention.
- investigate the dietary behaviours of awardees post intervention.
- assess whether the HBA intervention has influenced attitudes and/or behaviours - positively, negatively or no change.
- gain a basic overview of the links between dietary attitudes and behaviours
- form a set of recommendations based on the findings from the above objectives to inform best practice.

Methodology:

Case - control study, using purposive sampling of businesses undertaking the HBA, conducted using a pre and post intervention questionnaire and short supplementary post intervention semi structured interview, which seeks to assess whether the HBA affects the dietary attitudes and behaviours of awardees.

Main findings:

6 staff from HBA businesses were compared with 7 staff from none HBA businesses. From the interview data, most participants demonstrated positive dietary attitudes and behaviours though not always directly linked with the HBA. Key

themes included appreciation of learning and support, enablement to promote healthier options, benefits to the business and customers, other influences on dietary attitudes and behaviours, such as weight, family, health, individual responsibility, practical barriers such as time and society and upbringing. Where participants indicated the HBA had no direct impact on them as individuals, they still showed positive attitudes towards the receipt and recognition of the award, wanted to promote healthier options for customers and were positive about the award.

Statistical analysis of the baseline and follow up questionnaire data showed the results were not significant, however due to the small sample size the relevance of this analysis for making generalisations, and identification of trends is limited.

Overall conclusions:

Participants involved in the HBA demonstrated positive dietary attitudes and behaviours manifesting from a range of influencing factors. The factors that linked with the HBA highlighted some key insights into the impact of the HBA and the complex interrelationship between dietary attitudes and behaviours. Whether the HBA positively influenced individuals dietary attitudes and behaviours or not, overall participants found the intervention to be worthwhile.

**Declaration of original work**

'I hereby declare that work contained herewith is original and is entirely my own work (unless indicated otherwise). It has not been previously submitted in support of a Degree, qualification or other course.'

Signed..... Date.....

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## **Abbreviations**

ALW - Ashton, Leigh and Wigan

CIEH – Chartered Institute of Environmental Health

DH – Department of Health

HBA – Healthy Business Award

LACORS - Local Authorities Coordinators of Regulatory Services

SFBB – Safe Food Better Business

UK – United Kingdom

## Chapter 1

### Introduction

The current obesity epidemic and increase in diet related diseases such as cardiovascular disease are now widely recognised as major risks to the health of the population. The detrimental effects of overweight and obesity are widely documented and include an increased risk of Type II Diabetes, some forms of cancer, coronary heart disease, liver disease and premature death (DH, 2008; DH 2009). Studies have estimated that food-related ill health cost the NHS £6 billion each year (9% of its budget) (Rayner & Scarborough, 2005).

In 2008 'Healthy Weight Healthy Lives; a cross government strategy for England' was launched which has as its ambition to be the first major nation to reverse the rising tide of obesity and overweight in the population by ensuring that everyone is able to achieve and maintain a healthy weight. One of the five key themes identified in the strategy is 'Promoting healthier food choices' (Department of Health (DH), 2008). 'Healthy Weight Healthy Lives: one year on' (DH, 2009) states that 'It is vital that we continue to act in a wide range of settings to create a social environment that makes it easier for individuals and families to maintain a healthy weight'...and that 'Manufacturers and retailers can support their customers by providing and promoting affordable, healthy products.'

This dissertation aims to investigate whether the Wigan Borough HBA, including Ashton, Leigh and Wigan (ALW), influences the dietary attitudes and behaviours of awardees. A questionnaire is used to investigate the dietary attitudes and

behaviours of awardees at baseline and post HBA intervention for the intervention group and at baseline and follow up for the control group. It seeks to inform a basic overview of the links between dietary attitudes and behaviours to enable the formation of a set of recommendations to inform best practice and for the future use and, development of such awards as a way of implementing and supporting change in the obesogenic environment.

Objectives are to:

- investigate the dietary attitudes of awardees prior to the HBA intervention.
- investigate the dietary behaviours of awardees prior to the HBA intervention.
- investigate the dietary attitudes of awardees post intervention.
- investigate the dietary behaviours of awardees post intervention.
- assess whether the HBA intervention has influenced attitudes and/or behaviours - positively, negatively or no change.
- gain a basic overview of the links between dietary attitudes and behaviours
- form a set of recommendations based on the findings from the above objectives to inform best practice.

Primary Hypothesis:

The HBA Intervention influences the dietary attitudes and behaviours of awardees (positively, negatively or no change).

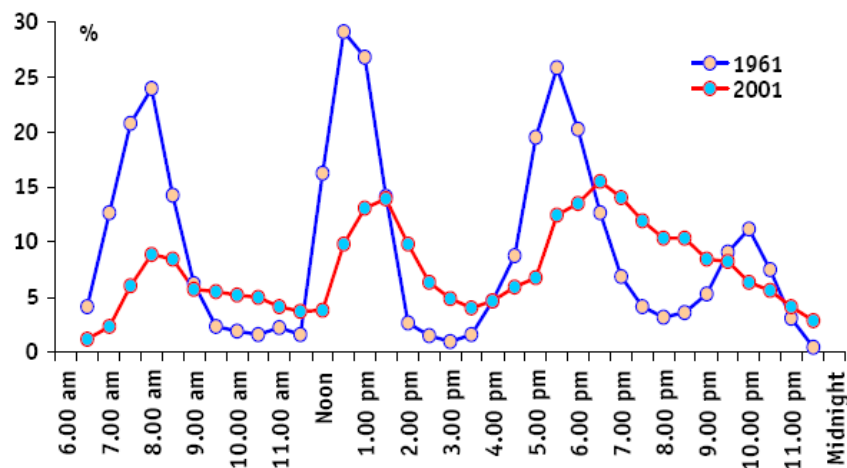
### **1.1.1 Key food issues**

An analysis of key food related issues (Cabinet Office Strategy Unit, 2008) has highlighted that food has become more affordable and food culture is becoming

more aspirational. More consumers are wanting healthier food that is convenient and ethical, as well as tasting good. However it is also highlighted in the report that there is a gap between what people do and what they say. The intention-action gap is demonstrated in the positive attitudes to healthy eating and the environment not being matched by spending patterns. The gap is also evident in the habits and practices around food, where people aspire to culturally desirable activities such as cooking a meal from basic ingredients and controlling children’s eating habits, but these good intentions are not always put into practice.

On average one in every six meals in the UK is consumed outside the home (Local Authorities Coordinators of Regulatory Services (LACORS), 2010). The following figure shows the % of people eating or drinking, in or out of home, by time of day, all days. The figure demonstrates that meals are less bound to particular times and people are eating when and where it is convenient.

**Figure 1: % of people eating or drinking, in or out of home, by time of day, all days**



(Source: Future Foundation, 2005, cited by Cabinet Office Strategy Unit, 2008).

### **1.1.2 National Diet and Nutrition Survey (2010)**

An estimated 70,000 premature deaths, representing 10% of current mortality could be prevented per year if the population's diet matched nutrition guidelines (Cabinet Office, 2008). The National Diet and Nutrition Survey (NDNS) (Food Standards Agency (FSA), 2010) provides representative data on the nutritional status and dietary habits of the United Kingdom (UK) population and provides a continuous survey of food consumption, nutrient intakes and nutritional status of people in the UK aged 18 months and older. The latest results from the rolling programme (February 2008-March 2009) focus on food consumption and nutrient intakes for adults aged 19 to 64 years and for children aged 18 months to 3 years, 4 to 10 years and 11 to 18 years.

It suggests that the nation is eating less saturated fat, trans fat and added sugar than it was 10 years ago when the survey was last carried out, which are positive trends that could have a positive impact on the levels of obesity, cardiovascular disease and other serious diseases. Saturated fat intakes in adults have dropped slightly to 12.8% of food energy, but are still above the recommended level of 11%. Intake of trans fat has also fallen slightly, and are within recommended level, and more than a third of men and women now meet the recommendation to eat '5-a-day' fruit and vegetables.

However, the survey also shows that the population is still eating too much added sugar (currently 12.5% of food energy intake compared to the recommended 11%) and not eating enough fibre, as average fibre intakes are 14g per day for adults, below the recommended 18g which is essential for healthy digestion.

Consumption of oily fish, which is the main source of omega 3 fatty acids, also remains below the recommended one portion per week.

For sodium intake, the results from the urine analysis were not included as the sample size was too small to report. Contributions of food groups to sodium intake were therefore based on the sodium intake calculated from the dietary intake which is incomplete because discretionary use of salt in cooking and at the table is not captured in the dietary record. However, the NDNS (2003) estimated males and females were eating on average of 11g and 8g of salt respectively – above the recommended 6g. Wanless (2002) highlighted that if the recommended intake was achieved a reduction in incidence of stroke by 22% and CHD by 8% would be likely, corresponding to around 11,000 stroke deaths and 8,000 CHD deaths annually.

Modelling suggests that a shift to the recommended balanced diet could yield significant health and economic benefits. The following table shows the number of avoided premature mortality and quality adjusted life years gained in the United Kingdom linked to specific dietary changes.

**Table 1: Premature mortality avoided and quality adjusted life years gained associated with specific dietary changes.**

	<b>PREMATURE MORTALITY AVOIDED</b>	<b>QUALITY ADJUSTED LIFE YEARS GAINED</b>
Increased fruit and vegetable intake by 136g per day	42,000	411,000
Reduce average daily salt intake from 9g to 6g per day	20,000	170,000
Cut saturated fat intake by 2.5% of energy	3,500	33,000
Cut added sugar by 1.75% energy	3,500	49,000

### **1.1.3 Wigan Borough Health Profile (2009)**

The health of the 305,600 Wigan Borough population, is generally worse than the England average, for example for over 65s 'not in good health' and life expectancy (Association of Public Health Observatories, 2009). Levels of healthy eating in adults (20.3%) are lower than the England average (26.3%) and obesity in both children (9.8%) and adults (28.5%) are above the England averages (9.6% and 23.6% respectively). There are inequalities by deprivation, gender and ethnicity, for example, men in the most deprived areas live around eight years less than those in the least deprived areas, and for women the difference is over five years.

Although the last ten years have seen a decrease in death rates from all causes and in early deaths from heart disease stroke and cancer, the rates remain above the England averages and the gaps between Wigan Borough and England death rates from all causes have widened over the decade. The health of children and

young people is generally worse than the England average demonstrated by poor levels of breast feeding initiation and high levels of smoking in pregnancy. A balanced diet can play an important role in supporting a decline in early deaths, but it is recognised that there are a range of factors that influence death rates, for example medical care.

NHS ALW Public Health Department and the Local Authority have worked together to seek an innovative way of delivering an industrial scale public health intervention which would contribute to the prevention agenda and enable people to make healthier choices more easily, as highlighted in *Choosing Health: Making healthy choices easier* (DH, 2004).

It was recognised that the use of national, regional and local award schemes for food businesses has become more popular as a means of trying to make healthier choices easier and more accessible, and as a way of recognising positive contributions to health. As previously noted, food eaten outside of the home is taking a more important role in the overall food intake of the population and the potential of award schemes to influence attitudes and dietary behaviour change is clear (Holdsworth, Haslam, & Raymond, 2000).

At all ages, a balanced diet is key for a healthy lifestyle. Simple steps like reducing salt, sugar and fat intake by making small changes can make a big difference to obesity and health-related issues like heart disease, cancer and diabetes (DH, 2008). Healthier catering award schemes work with local food businesses, to provide them with knowledge and motivation to serve and promote healthier food choices, thus enabling their customers to make informed healthier choices.

#### **1.1.4 Food Awards**

Increasing popularity in the use of food awards, notably the national Heartbeat award scheme, contributed and lead to the development of the HBA. As this award was the basis for the development of the HBA, it was deemed appropriate to use this as the main area for review. The Heartbeat Award is an environmental scheme that seeks to increase opportunities for behaviour change by providing customers in food outlets with information, reminders and reinforcement to guide them towards healthier food choices, with the overall aim of enabling food businesses to take an active role in reducing coronary heart disease (Holdsworth et al 2000).

There is clear interest in the use of food awards, as revealed by the number of Heartbeat 'type' awards that are run across the country. Most are delivered by local authorities and are thus promoted on individual authority websites. A recent LACORS landscaping paper (2010) provides an overview of eight schemes currently being delivered in the UK (including the Wigan Borough HBA). It highlights the paucity of existing formal evaluation of these programmes, as only Wales: Healthy option award and Scotland: Healthy living award are reported to have full evaluations available on their websites – however, on searching these websites, no reports were available. The other awards either had no evaluation available (Essex Food Liaison Group (2010) and Brighton & Hove Council with Brighton and Hove Food Partnership, and Brighton and Hove City NHS Trust, 2010) or had limited anecdotal feedback, (Lancashire County Council Trading Standards Service and Environmental Health teams in Burnley, Chorley, Preston, Rossendale, West Lancashire and Wyre, 2010). Three had evaluations in

progress with support from academic institutions (Surrey County Council Trading Standards Service, delivered in partnership with District councils in the county (2010), DH, Healthier Food Mark Pilot (2010) and Wigan Council HBA, 2010).

#### **1.1.5 Literature Search Discussion**

Formal searches were conducted using a number of sources and keywords: Ingenta, Pubmed, BMJ online, ISI web of knowledge, Medline, scientific web plus, Cambridge journals and Science Direct and Google, using the keywords such as 'Heartbeat award', 'dietary attitudes' and 'dietary behaviours', 'Nutrition attitudes and behaviours'.

Using the Keyword 'Heartbeat award' brought the most relevant academic papers for review although few in number, ranging from 0-8 relevant articles from different sources and high numbers of irrelevant articles, for example looking at specific heart conditions. The dietary attitudes list was mainly too broad or too specific to a particular population group or topic area, that would not be relevant for this study. A review of the references from the relevant papers was also conducted and revealed other relevant papers for review, especially in the area of nutritional attitudes and behaviours in the context of making healthier food choices.

Due to the paucity of academic papers a 'Google' search was undertaken to review the gray literature to find more – if potentially less academically focused papers. The search revealed 186,000 results for 'Heartbeat award', ranging from links to application forms to press releases announcing new awardees. There were a limited number of formal academic papers about the schemes and even fewer studies that investigated improvements in 'health outcomes' or attitudes and behaviour change.

This is a concerning gap in the evidence base, because the amount of time and resources that are put into such schemes is considerable and if the evidence base is weak in supporting the effectiveness of the interventions in changing dietary attitudes or behaviours then perhaps funding awards is not the most effective use of resources. In this period of economic recession, finances are under increasing scrutiny and public health interventions must be able to demonstrate effective outcomes for them to be of value in a competitive financial environment.

The academic papers that were directly linked to the award scheme reviewed different elements and outcomes of the Award. Some have assessed the views of caterers about the scheme itself (Murphy, Powell & Smith 1993; MacAuslan, 1995a, b; Snowden, 1998) or on the impact of the scheme on catering practices (Warm, Rushmere, Margetts, Kerridge, & Speller 1997) but none of the papers looked specifically at the effects of the award on dietary attitudes and behaviours of staff who have achieved the award in their food outlet. The need for evaluation of such schemes in changing behaviour has been highlighted by Pope & Cooney (1995), Warm et al (1997) and Holdsworth et al (2000).

Although not a direct match, the most similar piece of work that looked into the effect of the Heartbeat Award on workplace employees' dietary attitudes and knowledge was undertaken by Holdsworth et al. 2000. The authors highlight the lack of evaluation and research into the impact of the Award on attitudes and knowledge and seek to fill this gap. It is proposed that changes in attitudes and knowledge may impact on actual dietary behaviour change, as demonstrated by the Transtheoretical Model of Behaviour Change (Prochaska & DiClementi, 1992). However, they do not go on to assess changes in behaviour.

This model of behaviour change supposes that individuals go through a series of stages before achieving a lasting change in behaviour. These involve beliefs, attitudes and knowledge that ultimately lead to actual change. Going through phases of pre-contemplation, contemplation, preparation, action and maintenance, with an added stage of relapse and subsequent re-engagement with the cycle, this model shows that in theory, Heartbeat type awards have the potential to influence dietary behaviour at all stages of the cycle.

A longitudinal survey of employees in 6 workplaces by Holdsworth et al. 2000, using a structured questionnaire, pre and post intervention was conducted, based on the work of Glanz, et al. 1993. They used a series of validated questions that considered predisposing and enabling psychosocial factors, with four workplaces achieving the Heartbeat Award (n = 453) and compared them to 2 workplaces without the award (n = 124).

The study revealed that it is possible to maintain a certain level of healthy eating knowledge and increase the ease of access to healthier options, however, the level of input from the intervention was insufficient to establish substantial change in other dietary behaviours and did not seek to reveal an impact on uptake of the healthier options by customers or awardees.

Holdsworth et al. (2000) highlight the possibility that changes in dietary attitudes may precede changes in behaviour and food choice, based on the Stages of Change Model (Prochaska & DiClemente, 1982). This dissertation seeks to investigate both dietary attitudes and behaviours, and in doing so will enable the researcher to assess if there is a relationship between the two.

There is some evidence to support the relationship between health related beliefs or attitudes and health behaviours (Nemcek 1990; Bettinghaus 1986; Pender & Pender 1986; Shepherd & Stockley 1987). However, positive health beliefs have not always been found to be linked to good health (Weissfield, Kirscht, & Brock, 1990). This proposal seeks to evaluate whether staff within the businesses who are responsible for implementing and maintaining the set HBA criteria, are more effective in doing so if they are fully engaged with the process and thus develop positive dietary attitudes and behaviours as part of the process, if they do not have them at baseline.

#### **1.1.6 Wigan Borough Healthy Business Award - background**

The HBA is based on the Heartbeat Award Scheme launched in 1990, which sought to encourage caterers to offer healthier food and surroundings to its customers. To achieve the award, caterers had to combine good standards of food hygiene with healthy food choices and offer a designated smoke free eating area. Despite being popular with regulators, health conscious consumers and caterers, the award scheme was rarely adequately promoted, monitored or evaluated for its use as a vehicle of change.

In response, the HBA was developed and launched in April 2009.

It aims to stimulate the provision and demand for healthier food products in Wigan Borough, by working with businesses to improve the choice and nutritional content of food available, and by encouraging people to make healthier food choices. In doing so it seeks to promote positive attitudes towards a healthier diet and

encourage positive dietary behaviour change, which in the longer term will support the healthier weight agenda and overall health improvement.

The HBA seeks to raise people's awareness of the benefits of healthy eating and enable people in making healthier food choices. The HBA's aims are delivered through the programme's objective which are to:

- Improve the health of the community by increasing the consumption of healthier food.
- Provide information, support and training about healthy food and support businesses to make the changes necessary to improve the nutritional content of their food.
- Encourage businesses to develop and implement positive breastfeeding policies.

There is a step by step process undertaken by the award team from Wigan Council's Community Protection Section and individual businesses over a 6-8 week period, to achieve the HBA. This process includes the following steps:

When enquiries come in (via phone or at events) – an appraisal form is completed. This is passed to the relevant Healthy Business Adviser and a date is arranged for the adviser to visit the business.

During the first visit, the Healthy Business Adviser completes a 75 question assessment (see appendix 1) with each business and from this a short list is drawn up of changes or improvements that need to be made to meet the Award criteria. The detailed questions consider procurement, menu planning, kitchen

practices, promotion of healthier eating, provision of information for customers and staff training. These recommendations are followed up in writing.

The business is supported to implement the recommendations for example by providing expertise and guidance about alternative products and suppliers, reformulation and analysis of recipes using SAFRON nutritional analysis package and coding the recipes against traffic light criteria. 25% of recipes should be healthy options. There is a large amount of negotiation and communication (telephone, visits etc) between businesses and the award team during this period. Training is also offered to staff for example, Chartered Institute of Environmental Health Level 2 Award in healthier food and special diets, bespoke training in fats and healthier frying techniques for takeaways.

Checks are undertaken to ensure all Environmental health checks are up to date, and that businesses are compliant with food hygiene and Health and Safety, which is highlighted in their Safer Food Better Business (SFBB) manual. Once the assessor confirms that the recommendations have been implemented - usually at 6-8 weeks following the initial assessment, the business will receive the award.

The award is usually led by the business owner, manager or senior supervisor who ensures the criteria have been achieved. However, all staff participate in the learning experience and management need to ensure that these criteria are maintained, and therefore staff must be aware of the Award criteria and its application from effectively completing SFBB on a daily basis, to using appropriate cooking practices, for example seasoning correctly.

## Chapter 2

### Methods

This section will briefly discuss the methodology used to underpin the study design and then go on to discuss the study design itself. An overview of the population, sample, subjects and procedures will be presented, followed by data management and analysis.

#### 2.1.1 Methodology

It is an important part of research that the investigator is aware of their individual theoretical perspectives and assumptions about the topic in question, as the research questions based on these assumptions can direct attention and provide frameworks for interpreting observations (Bowling, 1997).

Broadly there appears to be two main traditions to inquiry: the scientific approach and more naturalist or interpretative approaches. The scientific approach labelled here as “positivism” is long established and still dominant in underpinning scientific methodology and health care research. By using quantitative methods it aims to discover laws and emphasise positive facts. Underlying the HBA study design is the understanding that in social science, positivism assumes:

...that human behaviour is a reaction to external stimuli and that it is possible to observe and measure social phenomena, using the principles of the natural scientist... and thereby establish a reliable body of knowledge about its operation based on empiricism... (Bowling, 1997, p. 110).

Thus, it was hypothesised that the staff involved in the HBA would 'react to external stimuli' – i.e. the HBA intervention, and that this would have an impact on their dietary attitudes and behaviours, which would be measured using the pre and post questionnaire. Thus whilst a questionnaire is a scientific measuring tool, its level and accuracy of measurement, however, are dependent on human factors such as bias, recall and subjectivity.

Positivism seeks to find a replicable truth whilst trying to eliminate values and bias, for example, by standardising research techniques and tools, thus minimising the influence of the tool or interviewer on the respondent. However, bias, ambiguity and lack of clarity are common problems in designing questionnaires.

Within research there is a widely accepted hierarchy of evidence, in that the gold standard is the randomised control trial – however this method may be less applicable in this study context.

It is acknowledged that human interaction affects results and that the positivist perspective is limited as it does not encourage understanding of underlying meanings of phenomena. The interface between researcher and participant plays a key role in eliciting information. Human interaction affects results and it is recognised that the context and setting of this interaction may also impact responses. With this in mind, it was deemed appropriate to investigate further into the quantitative data using a short semi-structured questionnaire. This sought to illicit and recognise the value of understanding the underlying reasons behind participant responses and acknowledge that a purely positivist approach may not be feasible in this setting and would not provide meaningful understanding into the questionnaire responses.

### **2.1.2 Study Design**

The design used was a case - control study, using purposive sampling of businesses undertaking the HBA and matching them with a control group. (See study flow figure in appendix 2) The study was conducted using a pre and post intervention questionnaire, and a short supplementary post intervention semi structured interview, which sought to assess whether the HBA affected the dietary attitudes and behaviours of awardees. Only quantitative data was collected at the 'pre' stage and both quantitative and qualitative data were gathered at follow up, in order to delve further into understanding the reasons behind the questionnaire results.

### **2.1.3 Population, sample and subjects:**

The overall population was adult staff (age 16+) working in food outlets, based across Wigan Borough.

The intervention sample was recruited from staff working in food outlets who contacted the HBA team to get involved with the award or who were recruited to undertake the HBA during the research period, for example during promotional events. The control group was recruited from the Council's FLARE database of all local food outlets, from businesses who were identified as broadly compliant with food hygiene standards, were not due for inspection over the following 6 months and who would therefore be less likely to know about the award and would not be having any planned visits or direct promotional activity.

The research aimed to recruit 60 staff from food outlets intending to undertake the HBA during the time of the study - such as managers, waiting on staff and chefs

for the intervention group, and 60 staff from food outlets not undertaking the HBA during the time of the study.

#### **2.1.4 Sample size justification:**

The study is based on the work of Glanz, Kristal, Sorensen, Palombo, & Probart, C (1993) and Holdworth et al. (2000), who had a sample size of four workplaces with the Heartbeat award (N=453) and compared these with two comparison workplaces (N=124). Glanz et al. (1993) piloted their questionnaire on 652 employees. However, no formal statistical power calculation was reported for either study.

The sample size for this study was agreed to be a feasible number of people that could be accessed from the businesses during the allocated time – this was based on the figures that the HBA team had worked with during the July 2009 period, when 30 new businesses enrolled. It was also deemed to be a feasible number of businesses that the award team would be able to support to complete the award throughout the duration of the study. The study was highly dependent on the number of food businesses interested in taking part in the award during the study period and who had staff who were willing to consent to be part of the study.

#### **2.1.5 Inclusion/ exclusion criteria:**

Inclusion: Adult males and females of working age, aged 16 - 65 years, who own and / or work in a food business in Wigan Borough.

Exclusion: Businesses who have achieved the Healthy Business Award or have had any initial support from the Award Team.

People who know they will be leaving the employment of the business during the time of the study.

Potentially pregnant, pregnant or lactating women and those on therapeutic diets will be excluded from the research.

### **2.1.6 Ethical issues**

Written confirmation that ethical approval was not required from the local NHS or council was given by the respective authorities. Ethical approval was sought and granted from the University of Chester Faculty Research Ethics Committee prior to commencement of the study (see appendix 3). All participants were provided with a participant information sheet and signed a consent form to confirm that they had agreed to take part in the study.

The gathering of personal information was the key ethical issue. Basic demographic data and information about the businesses had to be collected to enable the researcher to ensure that the control group and intervention group had similar features. This data included, gender, age, job title, type of business, type of meals produced and number of employees. Information was also gathered about the individual's dietary attitudes and behaviours. Questionnaires were anonymised by giving each participant a code number, and only the researcher and HBA team have access to the code list. The data is kept on a secure network (NHS ALW), on an encrypted, password protected pen drive, or locked in secure cupboards.

Every effort was made to ensure:

- that the study respected the rights and dignity of all participants.

- that the research seeks to make a positive contribution to the future development of this and other similar awards schemes.
- the research does not cause harm to the participants.
- that the researcher is honest fair and respectful of others.

If participants became upset at anytime during the process, for example, if sensitive to the topic of dietary attitudes and behaviours due to previous health issues, there was the opportunity for them to be offered support and to discontinue participation in the study with no further adverse effects.

A time commitment was expected from participants - for completion of the questionnaires at pre and post intervention and during the short interview, however, no changes to participant's lifestyles were imposed throughout the study.

All participants were assured that participation was voluntary and that they would be free to withdraw from the study at any time. (See appendix 4, participant information sheet and consent form).

### **2.1.7 Pre and post questionnaire**

The questionnaire was developed based on the work of Holdsworth et al. (2000) and Glanz et al. (1993) to generate the quantitative data which was compared pre and post intervention. (See appendix 4, structured questionnaire.) A structured questionnaire format was chosen to ease the gathering of quantitative data for analysis. Staff working in businesses also have limited spare time available during working hours and this method required less time commitment as it was deemed to be quick and easy for participants to complete. However, the pre coded response choices limited some of the answers and some participants were forced

to choose answers that did not fully represent their views. This was discovered during the follow up, short, semi structured interview, which enabled further exploration into the questionnaire responses.

The questionnaire considered the following dependent variables:

Predisposing factors:

- Belief in diet-disease connection, e.g. Eating a lot of fruit and vegetables decreases my chances of developing heart disease.
- Perceived benefits of a healthy diet, e.g. What I eat is one of the most important things for my health.

Enabling factors:

- Perceived barriers to healthy eating: e.g. The available information on healthy eating is easy to understand.
- Self efficacy for changing diet, e.g. I feel confident that I know what foods I should be eating to have a healthy diet.

Change relating factors:

- Self efficacy for change: e.g. how confident are you that you will decrease the amount of fat in your diet during the next 6 months?
- How confident are you that you will consume more fruit and vegetables in the next 6 months?
- Self rated diet: e.g. How high in fat is your overall diet?

The HBA intervention is the independent variable and is described previously.

### **2.1.8 Semi structured follow up interview**

The follow up interview questions were added because the sample fell very short of the required numbers for meaningful quantitative analysis, due to time and resource constraints. The questions delved further to try and understand the participants experience of the HBA, what influenced participants dietary attitudes and behaviours and whether the HBA had influenced any changes. (See appendix 4, interview guide questions.)

The interviews were held in the business premises, following completion of the post questionnaire. The interview was recorded with agreement from the participants. Some interviews took place 1:1 others had to be in small groups due to the nature of the venue and type of business.

It is acknowledged that there are strengths and limitations for both tools used. The questionnaire and interview process were time consuming, especially when added to the travel time for interviewer. However, it did ensure that follow up was completed for appropriate participants – who may not have responded by postal questionnaire alone. There is potential for interviewer bias and social desirability bias for both questionnaires and interview. The use of both tools sought to reduce some of this bias and gain more meaningful and thorough data, although it should be noted that the experience and skills of the interviewer play a key role in eliciting valuable information.

### **2.2.9 Procedures**

When businesses enquired about the award a HBA appraisal form was completed over the phone with the business, by the Award Team. This form gathered basic

data about the business and included a section to ask if the business would be willing to take part in the study. If the business agreed the Healthy Business Officer arranged a mutually convenient time for them to visit the business. The officer provided the Participant Information Sheet and consent form (which also confirmed eligibility) to all individuals willing and eligible to take part. The opportunity was provided for staff to ask further questions.

A structured questionnaire was completed at the first visit, before the business had received any support from the HBA team and subsequently followed up with the same questionnaire and a short semi structured interview undertaken by the lead researcher. All staff who were present during the visit were invited to complete the questionnaire subject to exclusion criteria and receipt of consent forms. Participants were encouraged to complete the forms during the visit to increase likelihood of compliance, but were offered the opportunity to post them back at a later date if preferred. It was made clear that participation was voluntary and that their feedback and comments would be confidential.

As intervention businesses were identified, the control businesses were identified by the HBA team from the FLARE database of food outlets and matched to the intervention group. Contact details for appropriate control businesses were provided by the HBA team for the lead researcher. Following an initial phone call a mutually convenient time was agreed for the visit and completion of the questionnaires and interviews undertaken as above, by the lead researcher and without the control group receiving any information about the HBA.

It is acknowledged that the nature of recruitment to the study means that there is inherent bias, as the study is limited to those who are willing to participate in the

award and subsequently consent to take part in the study. It is possible that participants may therefore be more 'interested' in the subject area, than if they were chosen at random.

### **2.2.1 Timescale**

The pre and post timescale was dependent on the time the intervention group first registered interest in the award and the duration it took to achieve the award. It was expected to be 6-8 weeks between pre and post questionnaires. In reality this varied considerably and some had not achieved the award, before time pressures meant the follow up questionnaire and interview had to take place to ensure some data was gathered. The earliest pre-questionnaires took place in mid October 2009 (14/10/09) and the latest in November 2009 (25/11/09).

As it became apparent that some of the intervention groups were not progressing as quickly as anticipated, or in the numbers anticipated, it was deemed appropriate due to limited time and resources to go ahead with the follow up, including a short semi structured interview to gain more in depth understanding of the process, and its impact on their dietary attitudes and behaviours thus far through the intervention. Follow ups took place between January 2010 (26/1/10) and February 2010 (11/2/10). The average length of time between pre and post follow up was around 14 weeks, with the shortest time being 10 weeks.

### **2.2.2 Data management and analysis**

The data from the questionnaires was coded and keyed into SPSS version 17.0 (SPSS, 2008) with the intention of basing data analysis on methods used in a similar study undertaken by Holdsworth et al. (2000). However because the final

sample was so small (see results) it was deemed inappropriate to run the full analysis that had been planned as there was insufficient data to determine significance. Data is only presented for participants who completed both questionnaires.

The questions from the pre and post questionnaires were clustered into predisposing, enabling and change related factors. In line with Glanz et al. (1993) and Holdsworth et al. (2000) the predisposing and enabling factors provide an indication of attitudinal changes and the change related factors will indicate behaviour change:

1. Predisposing factors (questions 1, 2, 5, 6, 9, 14)
2. Enabling factors (questions 3, 4, 7, 8, 10, 11, 12)
3. Change related factors (questions 13, 15 - 22)

Each individual question was scored from 1-5 and a range score calculated for each domain – where a low score was the ‘desired’ response. Each participant then had new variables created to represent each pre and post domain score.

1. Pre-predisposing factors domain score
2. Post -predisposing factors domain score
3. Pre-enabling factors domain score
4. Post-enabling factors domain score
5. Pre-change factors domain score
6. Post-change factors domain score

These scores were divided into the 3 domains and keyed into Excel and SPSS. An analysis of the mean of the difference between the group scores of pre and post questions in predisposing, enabling and change factors was undertaken.

The independent sample t-test was used to compare the values of the means from the two samples and test whether the samples were from populations having different mean values. This test was also used because the sample size was small and the mean values of the difference in the scores are continuous data.

A mean score was also calculated for each group domain pre and post baseline to provide an indication in direction of change.

Because the sample size was small the statistical analyses was not taken further and instead the data was combined with the interview data for qualitative analysis.

### **2.2.3 Qualitative methods**

A short follow up, semi-structured interview was undertaken with each member of staff who had completed the baseline questionnaire and on completion of the follow- up questionnaire.

The researcher visited each participant in their business setting, at a mutually convenient time, agreed over the phone. The interviews were recorded and took place one to one or in small groups of two or three depending on staffing requirements and practicalities of space.

The purpose of the interview for the intervention group was to expand on the data gathered from the questionnaire and delve further into understanding the participants experience of undertaking the HBA and whether it had has any impact

on their dietary attitudes and behaviours. For the control group, the purpose was to explore what influenced their dietary attitudes and behaviours overall.

The recording of the interviews ranged in duration from 6 minutes 16 seconds to 35 minutes 2 seconds. This was influenced by a number of factors, including whether the participant provided full or limited answers, how engaged the staff member had been in the process, whether the participant had to leave for a period of time to serve customers, how busy the staff were and whether the participants had other commitments that meant the interview had to be undertaken more quickly.

A number of settings were particularly noisy with customers, babies, industrial cooking and kitchen equipment, crockery and cutlery. At times this meant that the flow of the interview was more difficult, slower and transcription of the tapes more challenging. Those in a cafe or pub setting tended to be easier as there was sufficient space to sit at a table out of the way and conduct the interview, and they also tended to have fewer customers present. One of the chip shops had a seating area, but the staff were looking after a baby, the shop was unexpectedly busy at the arranged time so there was a lot of equipment in use and serving of customers. The interviews at the other chip shop and sandwich takeaway were undertaken across the serving counter.

The interviews were transcribed by an independent transcriber, then the transcripts were reviewed by the lead researcher and amendments made where appropriate.

The interviews were analysed using a broad framework of discourse analysis, which describes a wide range of social science research based on analysing texts,

interviews and recorded talk. The transcripts were reviewed alongside the individuals' pre and post questionnaires and key themes emerged. The themes were labelled according to how they best described the data. Exploratory analysis was then conducted to gain a basic overview of the links between dietary attitudes and behaviours.

## Chapter 3

### Results

#### 3.1.1 Quantitative Results

Final sample: 10 people completed the pre – questionnaire for the intervention group, of which 6 people (2 staff each from 3 businesses) were followed up post intervention. Of those who completed the pre questionnaire, 1 was from an ineligible venue, 2 were unwilling to complete the follow up, 1 was deemed inappropriate to follow up by the HBA team.

The controls were matched according to the following criteria: category C business, eat in or take away, number of staff, independent business or chain and meal preparation method.

7 people (3 people from 1 business and 2 each from 2 businesses) completed pre and post questionnaires and follow up interviews as part of the control group. Contact details had been provided by the HBA team and calls were made to these businesses until an appropriate number of people agreed to take part to match with the intervention group. 1 business had been unwilling to take part as they stated they had made no progress at all since the last visit and had been forced to close during the daytime; had debts to sort out, were only open in the evenings at the moment and wanted to see how things progressed. 1 was uncontactable due to incorrect contact details and there was no answer from 1 business after 3 calls.

The sample was predominantly female and included staff from takeaways, a public house and cafes / coffee shops. Ages ranged from 23 – 61 years old and staff were mainly owners / managers or assistants.

Due to the small sample size, it is recognised that the generalisability of the data and the ability to achieve significance is very limited. The addition of the qualitative data recognises that the rigour associated with traditional quantitative data analysis is superseded by thoroughness and bias cannot be eliminated. Once recognised the implications of the results can focus more towards participants' experiences of the HBA, and understanding their dietary attitudes and behaviours.

Overall, 10 participants completed the intervention group baseline questionnaire and 6 were followed up. 7 completed the control group baseline questionnaire and follow up.

**Table 2: Summary of key demographics**

	<b>INTERVENTION GROUP N=6</b>	<b>CONTROL GROUP N=7</b>
Male	1	2
Female	5	5
Age: Oldest	43	61
Age: Youngest	29	23
Mean age	34.7	41.1
<b>Job Title</b>		
Owner / manager	3	4
Partner	1	0
Assistant manager	1	1
Licencee	0	1
Shop assistant	0	1
<b>No of Employees</b>		
1-3	2	3
4-6	3	2
6-12	1	2
<b>Type of business (A and B)</b>		
A)Independent business	6	4
A)Chain	0	3
B)Gastropub	0	3
B) Sandwich bar	4	1
B)Takeaway	2	2
<b>Type of meal(s) served in the business</b>		
Breakfast	3	4
Snacks	5	4
Lunch	6	7
Evening meal	2	5
Functions	3	3
All day	2	2
<b>Share info with HBA</b>	<b>5</b>	<b>7</b>

## **Intervention group compared to the control group (manual analysis of questionnaires)**

### **'Pre disposing' factors (See page 32)**

When comparing the pre and post baseline 'pre-disposing' factors domain scores for individuals in the intervention group (N=6), 2 show a positive change, 1 no change and 3 negative change. The overall group mean score for the domain also shows a negative change.

For the control group (N=7) 3 show a positive change and 4 a negative change. Overall the group mean also shows a negative change.

### **'Enabling' Factors (See page 32)**

When comparing the pre and post enabling factors domain scores for individuals in the intervention group, 2 show a positive change, 1 no change and 3 negative change. Overall the group mean score for the domain shows a positive change.

For the control group, 2 show a positive change, 2 no change and 3 negative change. Overall the group mean shows a negative change.

### **'Change' Factors (See page 32)**

When comparing the pre and post enabling factors domain scores for individuals in the intervention group, 3 show a positive change, 1 no change and 2 negative change. Overall, the group mean shows a negative change.

For the control group, 3 show a positive change and 4 a negative change. Overall, the group mean shows no change.

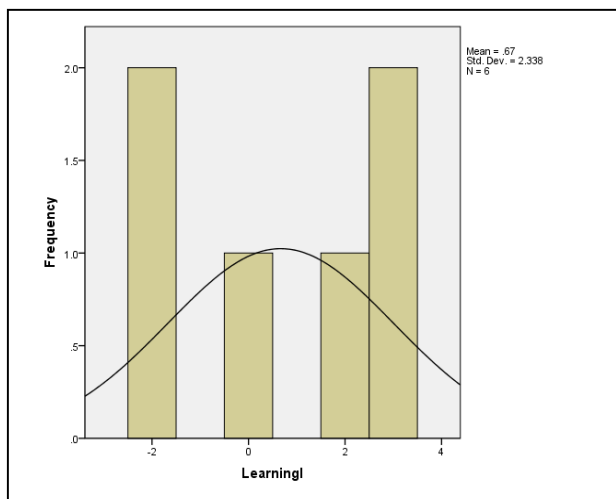
Due to the small sample size and the fact that the differences between the pre and post group mean scores are all very small, the data should be treated with caution and may not represent any real trends.

### **Statistical analysis**

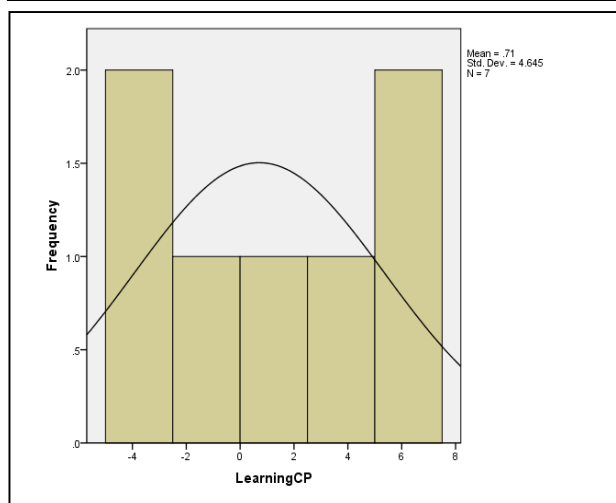
When analysed in SPSS and Excel using an Independent sample t - test for each domain score, no statistical significances were found between the means of the intervention and control groups pre and post for any of the domain groups. See tables below. This may be due to outliers in the groups that cancel each other out and will be explored further in the qualitative analysis. Despite no statistical significance being found the small sample size means interpretation of these results is limited. Thus, the predisposing factors results are included as examples of the test undertaken and the enabling and, change related factors are included in appendix 5.

**Table 3: Predisposing factors - Intervention and control group, pre and post questionnaire scores, for predisposing factors.**

QUESTIONNAIRE SCORES – PREDISPOSING FACTORS							
Intervention group				Control Group			
Unique Identifier	Pre	Post	Change	Unique Identifier	Pre	Post	Change
001	11	9	-2	60	13	12	-1
002	9	12	3	61	18	13	-5
004	11	11	0	62	14	20	6
005	6	8	2	63	16	19	3
006	6	9	3	64	15	10	-5
007	16	14	-2	65	9	10	1
				66	9	15	6



**Figure 2**  
The histogram for the intervention group demonstrates that the data is not normally distributed.



**Figure 3**  
The histogram for control group demonstrates that the data is not normally distributed.

**Table 4: Group statistics - Independent Samples T-test for intervention and control group for 'predisposing' factors**

<b>GROUPS</b>	<b>N</b>	<b>MEAN</b>	<b>STD. DEVIATION</b>	<b>STD. ERROR MEAN</b>
Diff predisposing-Intervention	6	.67	2.338	.955
Diff predisposing-Control	7	.71	4.645	1.755

**Table 5: Independent samples - T-test for equality of means (predisposing factors)**

	T	DF	SIG. (2 TAILED)	MEAN DIFFERENCE	STD. ERROR DIFFERENCE	95% CONFIDENCE INTERVAL OF THE DIFFERENCE	
						Lower	Upper
Diff - Equal variances assumed	-.023	11	.982	-.48	2.100	-4.670	4.575
Diff - Equal variance not assumed	-.024	9.116	.982	-.48	1.998	-4.559	4.464

The T-test was used to determine the difference in the means between intervention and control groups in predisposing factors. Because the data is not normally distributed – see histograms above, SPSS was used to perform the test without assuming equal variances. The table above shows the SPSS analysis using assumed equal and unequal variances. Both show t-test of -0.023 and -0.024 respectively and since the data is not normally distributed, the result of 'equal variances not assumed' from the data will be used in the result

interpretation. Although the mean difference in both groups was -0.048 (Standard error 2.1 and 1.9), the P value of 0.982 (>0.05 significance level) shows that there is insufficient evidence to show that there is statistical difference in change from pre and post, in both intervention and control groups at the predisposing factor level.

**Table 6: T test: independent samples, assuming unequal variances in predisposing factors (using excel)**

<b>T-TEST: INDEPENDENT SAMPLES, ASSUMING UNEQUAL VARIANCES IN PREDISPOSING FACTORS (USING EXCEL)</b>		
	<i>Variable 1</i>	<i>Variable 2</i>
<b>Mean</b>	<b>0.67</b>	<b>0.71</b>
<b>Variance</b>	<b>5.47</b>	<b>21.57</b>
Observations	6.00	7.00
Hypothesized mean difference	0.00	
df	9.00	
<b>t Stat</b>	<b>-0.02</b>	
<b>P(T&lt;=t) one-tail</b>	<b>0.49</b>	
<b>t Critical one tail</b>	<b>1.83</b>	
<b>P (T&lt;=t) two tail</b>	<b>0.98</b>	
<b>t Critical two-tail</b>	<b>2.26</b>	

The analysis in excel shows the t Critical two tail test as 2.26, which would need to be exceeded in order for the difference between the means of the scores in both intervention and control groups at predisposing factor level to be significant at the 5% level. Thus this test also demonstrates that it is not a significant result.

As previously noted, the same process was undertaken for the enabling and change related factors which produced none significant results. This should be

treated with caution due to the small sample size and may not provide a meaningful representation of the data. (See Appendix 5)

### **3.1.2 Qualitative Results - Intervention Group**

The broad framework used for analysis of the interviews was discourse analysis.

For the intervention group key themes emerged, these were:

1. Appreciation of learning and support
2. Enablement to promote healthier options
3. Benefits to the business and customers
4. Influences on dietary attitudes
5. Influences on dietary behaviours

Examples from the interview transcripts will be presented to demonstrate each of the key themes.

#### **Theme 1 - Appreciation of learning and support**

More in depth answers and appreciation of learning and support came from the staff member who had had most direct contact with the Award team, often the manager of the business. Some of the assistants tended to show less enthusiasm, had clearly had less direct input from the HBA Officer and had not had the experience cascaded fully by their manager. Others were more positive. This is demonstrated by one cafe owner who had not yet fully achieved the award but had made good progress and worked closely with the HBA Officer. Throughout the interview she showed appreciation of the learning and support she had received:

Well I knew that we would be getting a new menu and I knew that I'd have help deciding about which goods should actually go in it, and I knew that to have the award would just make it easier to do better healthier choices. You know like the measuring, I did the measuring and the weighing and then X (HBA officer) has taken it away and

worked out how healthy it is, which is something that I wanted to do from the first time we opened but there was no one really available to do it... but I wasn't aware, before I started doing it, that there would be like promotion of our menu afterwards which is really, really good.

... Personally for us it will be good because we're all on Weight Watchers! (Laughter) But it's that personal knowledge as well because we can all use it at home can't we. We can use the knowledge that we learn...

When asked at the end of the interview if she had any further comments, the value she placed on the support being available was further reiterated,

And I think it's fantastic really that you get the support to do it... it was something I really wanted to do for the business but it wasn't essential. So of course if it's not essential when you first start something up you just put it to one side. And now I've been able to do something I've always wanted to do ... and you're getting the advertising as well it's brilliant, it's really good, really good.

In contrast, the assistant, who it transpired had not had much direct contact with the HBA Officer had very limited appreciation of the process, support received or learning. When asked about her expectations for the HBA, she did not know and even with further questioning there were long pauses and simple yes or no answers. She did not answer when asked if there were any benefits of the award. However she stated that the manager passed the information on and implied that she had in fact learnt information that could be passed onto customers, but struggled to provide in depth responses. For example:

...it was a bit surprising some of the things that – how 'colleague' puts things and one of the things was like a sandwich, the ham sandwich on brown bread, you'd be better off eating like beef on white...so it was very surprising. I was quite surprised at some of the things,,,

It's improved with customers. It's like we can now say to them, ..well I use that example the ham and the beef, so we can say something's healthier than... (trails off)

This final statement also supports the 2<sup>nd</sup> theme, where participants identified that it enabled them to promote healthier options.

Overall, she said the award had not influenced her dietary attitudes or behaviours and did not have any further comments at the end of the interview.

Despite the limited interview, the baseline and follow up questionnaire actually showed slight improvements in each domain of predisposing, enabling and change factors.

A similar pattern emerged from the intervention takeaway, who had received the specific takeaway HBA (i.e. the criteria are adapted to suit this venue). In this instance, the assistant again had had less contact with the HBA officer, had shorter more limited answers, but in contrast to the previous assistant was much more positive overall. The manager showed a very strong desire to learn things that would enable them 'do things right' and showed great appreciation of the learning and support received.

What we expected to get out of it really was to learn the correct way not only to be frying our fish and chips but you know how to clean our pans out, how to condition our oil, how to get the best out of everything really...Everyone we spoke to who had chippies that we knew all told us different things. One guy said to me – 'Oh there's no right or wrong way'. Actually there is and so it's been fantastic for us.

...We were so lucky that we got the help we got when we got it so early on because it could have been the difference between success and failure.

...what we tried to do was speak to people who we knew had fish and chip shops to try and get as much information out of them as we can, and that's when we discovered this is a minefield because everybody was giving us different answers...

So when X (HBA Officer) came on board, fantastic, because she really pointed us in the right direction didn't she?... it's just things like putting vinegar in with water and bringing the pans to the boil with the vinegar in, fantastic, unbelievable.

When asked about the key benefits of the award again the value and appreciation of the learning and support was highlighted:

...knowing what you are doing is right and that there is help and support out there as well, you know one phone call to X (HBA Officer) or an email on anything we might be struggling with...We don't live round here...and we feel lucky that we've got a chippy in Wigan and we've got all this help and support because I don't think this help and support's available in 'hometown'...We just feel privileged you know, it's fantastic.

## **Theme 2 - Enablement to promote healthier options**

The 2<sup>nd</sup> theme 'enablement to promote healthier options' emerged from a number of the participants. One café owner explained how it enabled them to directly offer customers healthier options:

...generally we'll ask people, if they're having cappuccino, if they want skimmed milk if you know that will be good, without offending them!  
(Laughter)

When asked about her expectations for the HBA, another cafe assistant stated,

Well it's finding out all the nutrients that are in the things, and then you can tell other people and get them to eat a lot healthier which is what we're aiming to do really. Like get everybody eating low-fat diets just to get them healthy really.

Interviewer:

And has that been easier since you've had the award?

Participant:

Yes, yes a lot easier because obviously you go into more depth than what you really would, it's good really.

Interviewer:

So what did you think at the beginning that you would get out of it at the end?

Participant:

Well hopefully getting the certificate to say that we are healthy that we do offer healthy eating things, and let people know that it's not just us saying it, that it has been proven that the process that we go through with all the foods, like what we buy in, it's all healthy, good healthy food.

Further on, when discussing the main benefits of the award she continues:

Well the main benefit is you are teaching other people how to eat healthily where if there's not somebody there to teach you then you

won't do it. And I think it's got to the stage now where everybody needs to know how to eat healthy.

... And it has taught me a lot to go the right way for the healthy eating, which I think everybody should know...

The owner of this café was also positive about the award enabling staff to promote healthier options, even though at the point of interview they had not yet received an award.

I shall look forward to getting it because I think that's my aim as a business to offer more healthy choices, like when I do buffets...I think when people have a business lunch that's what they want. They don't want to be thinking there's two thousand calories there on that plate but I'm hungry and I do like sausage rolls...So I think it's good for me because it's a way of saying, look this is what I do and somebody's recognising it. And I think I will get a lot out of it...

... Also when anybody is either looking at my website, looking at buffets, or walking through the door they can see that I'm making an effort to have healthy choices, because how would you know?... Also if you're on a diet...if you can see that something has less than so many calories deemed to be acceptable then I think that's an easy choice isn't it, rather than you trying to calculate and making it up. ...Whereas if someone is saying 'that's official' I imagine that lots of people would be – oh good!

### **Theme 3 - Benefits to the business and customers**

The 'benefits to the customers and business' can also be seen in some of the quotes above, for example, wanting to meet the needs of customers, who do not always want high calorie, high fat foods and that they are making it easier for customers by making the healthier choices clear on the menu.

The takeaway manager also felt strongly about the benefits to both customers and their new business of the HBA:

...We were so lucky that we got the help we got when we got it so early on because it could have been the difference between success and failure...

...to say that it hadn't changed the business at all would be lying. It certainly has changed the way that we look at things plus the way that

you sell it to your customers as well. Our customers can be confident that what we are doing is right, in their best interests, as well as ours really which is important for us you know.

One café manager also highlighted that by benefitting customers by providing them with what they want, it will also be beneficial to the business:

We can use the knowledge that we learn, but for the business we have a lot of university people that use it and they all like low fat things anyway so promoting it more, especially at this time of year, will bump up sales I'm sure and give us a better image really.

#### **Theme 4 - Influences on dietary attitudes**

The 'influences on dietary attitudes' included a number of different elements. The attitudes towards diet were generally very positive with people wanting to be able to eat well or 'healthily', for themselves and for them to be able to offer healthier choices for their customers. For some the HBA was a positive step and a means to getting recognition for healthier options, but had not impacted their personal attitudes at all. A number of the interviews demonstrated that the participant had always had a desire to be healthier and promote healthier options, and thus the intervention itself may not have made any large changes in attitudes, but rather had a supporting and reinforcing role. This was also brought out in theme 5, along with other elements of overlap between the responses regarding attitudes and behaviours.

The key positive influences on dietary attitudes that people reported were:

- family
- health – especially weight or other specific health concerns
- HBA

The following conversation demonstrates all three of these elements.

Interviewer:

So in terms of you as an individual what do you think are the main dietary influences on your attitudes, the main influences on your choice of foods?

Participant:

My wife! (subsequently referred to as Y) (Laughter from both parties)

...Yes, Y's probably the biggest influence on my diet because when I met Y my diet was shocking...just such an unhealthy lifestyle.

(Longish pause here as has to go away to serve customers.)

Two and a half years ago I was 17 stone... and I bent down to fasten my shoelaces and got up out of breath and sweating and I thought it's time to do something about this. And I just embarked on a lot of exercise at home, I didn't go to a gym or anything like that, I've lost four and a half stone altogether... I've gone from a 40 inch waist down to a 32

When asked directly whether the HBA had had an impact on dietary attitudes, the participant responded stated,

Oh yes, I mean we're kind of, we'd be more funny about eating fish and chips somewhere else now because of - well if they had one of those hung up (points to their HBA poster) probably not any problem.

Interviewer:

...You feel you could trust them?

Participant:

Yes, that's it...It's a big education isn't it at the end of the day so yes, to say that it hadn't changed the business at all would be lying. It certainly has changed the way that we look at things plus the way that you sell it to your customers as well.

One participant's role as a mother was a key influence on trying to eat more healthily,

...obviously most people want to eat healthily don't they and we try and get our fruit and veg. in during the day...But like being a mother anyway you always try and give your kids the best anyway don't you.

And when asked directly about the impact of the HBA,

I think it makes you think more about what goes into food because when we first took over he was selling panga fish, the last guy, and obviously straight away we changed that to cod because X did some research on it and found out all about it and we were - oh God we

don't want to be eating that. We don't want anybody to eat that because it's not good.

A participant from another business demonstrated that the HBA had had a more direct impact on her attitudes, in that she felt more knowledgeable and wanted to know more about food and what went into it,

I look more now at what's being put into the foods, and even now for me to go to the supermarket I'll look - what.

Interviewer:

Why is that?

Participant:

Because I want to know more, because I know now that you can get things with additives taken out, that you haven't got the additives, the things that are foreign that have been added. And like the fat content and things like that. You might look at it more now because you're more knowledgeable about it...

Interviewer:

Ok, do you think that the Business Award has specifically had an influence on your attitudes towards food?

Participant:

On mine yes, definitely, definitely, yes because it has taught me a lot.

In contrast to this, the manager of one of the cafes felt the HBA had not changed her attitudes, because she was already confident and positive about healthier choices at baseline and actually went onto question the appropriateness of the HBA criteria itself,

I don't know that that would have changed a lot because I didn't know the Healthy Business Award existed and I was very pleased to know that it did, but I don't think that it's necessarily changed any of my ideals. I'm fairly confident that I know what's good for me and what's not. One thing that I was surprised at, which is maybe just the way this healthy business is geared, it's all low fat rather than it being what is necessarily what I would consider 'balanced'....So that one I did struggle a little bit with. But it's saying healthy as in it's low sugar, low salt and low fat. But higher fat things are not necessarily all bad so I don't think that's reflected in it.

## **Theme 5 - Influences on dietary behaviours**

As discussed earlier, many responses to the question about 'influences on dietary attitudes' were linked to the responses regarding behaviours. Many focused on specific changes they had made or were trying to make, but the influences on these changes appeared to be the same as for theme 4.

For example, when asked if the HBA had influenced their behaviour, one café assistant responded,

... I never used to eat peppers or mushrooms and now I'll just eat so many because I won't put any fat in them, they're always done in the oven so there's nothing added to it, it's just like a natural, it's low-fat food.

In response to the influence of wanting to lose weight and for health reasons, the manager of a takeaway stated,

Exercising and tweaking my diet. I ate a lot of red meat. I eat very little red meat now. I don't eat white bread at all I only eat brown bread these days. I just cut down on chocolates, sweets, things like that.,.

In order to delve deeper to try and understand what had actually influenced the person to make those behavioural changes to enable them to lose weight, the influence on the behaviour change was identified as,

What made me change was basically I was sick of being overweight. It had become a confidence point of view, you know physically, I was thinking, at the time I was 35, and I was thinking I've got to do something about it now because if I left it much longer who knows.

Interviewer:

Yes, so it was a kind of self-realisation really?

Participant:

Yes it was, very much so.

Other participants from one of the cafes were also trying to lose weight and this desire alongside the added value and support from the HBA intervention came out as a combined influencing factor on peoples' dietary behaviors. For example,

Well now everything has to be low-fat for reasons for my health and to help me lose weight and this has helped me more. I've been dieting for 12 months so in the first 6 months I didn't lose as much as what happened in the last 6 months because that's through working here.

Interviewer:

Right, so the two together have supported each other and helped you?

Participant:

Yes, yes.

Another participant stated,

...I've been doing this Weight Watchers and this Healthy Business Award it's kind of brought them both together to give me extra knowledge. But it brings it more to your attention doesn't it, to like really focus and take notice of what you're eating and really think. And yet I have felt actually that these are the things you know but when someone sits down and talks to you about it then it brings it to the front of your mind a bit more again doesn't it.

Interviewer:

Yes it clarifies things a bit. And would you say that you've actually changed things that you've eaten?

Participant:

Yes I would...

However, another reinforced that it was weight loss that influenced her dietary behaviour and not the HBA,

Not necessarily because of this (the HBA). I have because I want to lose weight. Because I think as a team of people we're all kind of aware that if you keep shoving the wrong things in your food then it's not good for us. So we're all kind of trying to be relatively healthy at the minute.

## **Control Group**

The interview questions for the control group focused specifically on dietary attitudes and behaviours, as this group had not undertaken the intervention. Some answers were fairly limited and it was clear that these were not issues that they had thought much about. Others participants were more dynamic about the issues and had strong views on a number of different levels, for example, them as an individual compared to their customers and then wider society.

From the interviews key themes emerged:

1. Weight and health
2. Individual responsibility
3. Practical barriers
4. Society and upbringing

### **Theme 1 – Weight and health**

In line with the intervention group, weight and health issues emerged as a key influencing factor on peoples' dietary attitudes and behaviours. For example, licencee stated,

I've got a lot of family that are diabetic so obviously I don't want to go down that route because I don't do needles... Plus I joined Weight Watchers a while back so I tend to still try and go along that side so I still continue to keep the weight off...I've got a couple of members of family have got bad hearts as well so.

The partner of the above participant had an additional goal of running a marathon however this was also linked to managing his weight.

Well my dietary attitudes have changed over the last six months because I'm training for the London Marathon in April...I'm up to five miles each run so it's like fifteen miles a week so that helps obviously to keep a lot of weight off.

Other participants also mention weight management, 'cholesterol problems' and 'heart problems' as things that affect their attitudes towards food in such a way as to try and eat more healthily.

Some participants were less clear of their dietary influences and initially appeared not to consider health or weight as an influence at all, in favour of preference. Subsequently reference was made to some current or historical feelings linked to health and weight, although they were clearly not top priority. For example, the two staff members present for the following interview from a cafe, when asked about the influences on their dietary attitudes, they responded,

Participant – male

It depends on what it looks like and what it tastes like. If it tastes nice then whatever's in it, it doesn't matter basically.

Participant – female

Yes it is true that isn't it, it's just if you fancy it sometimes isn't it?

Participant – male

Also the smell, if it smells nice you're going to eat it, if you don't like the smell of it you're not going to go anywhere near it...

...If you want something you're going to go and look at it, if you don't want it you're not going to have it, top or tail.

He then went on to describe the fact that he ate lots of fresh fruit and vegetables because that is what he had grown up with (theme 4) and that he did not add salt to his food or cooking – which appears to demonstrate a regard for health. However, it transpired that salt was not added because he did not like it at all (preference) and he added that,

So it's fresh fruit and veg. mainly the input of my diet since day one, it is just everything else that goes with it... So we have mashed potatoes smothered with butter!

When asked directly about whether there were any challenges associated with eating a healthier diet a weight loss diet was alluded to, again demonstrating a

positive regard for health and weight, however, it was quickly dismissed due to practical problems of the work setting - lots of cakes and pies.

...Two years ago I was doing the Atkins diet and I lost loads of weight on it but being in here with the work I just can't keep it up.

But then further challenged himself stating,

... no, to be honest with you basically if we wanted to there's no obstacles if you set your mind to it.

Although the female participant initially agreed that preference was a main influence, for example,

Well I add salt, I add salt to everything me don't I? If I have soup I add salt, salt and pepper. Yes I like salt.

However, later in the interview when the male went to service a customer, when asked whether she had any challenges to eating a healthier diet, she stated that there were no challenges, but she was struggling to try and eat healthily which she felt was impacting her health. Her response seemed slightly contradictory at times, which may indicate some internal conflict about good intentions and not being able to follow them through.

No, (challenges) but I can't do it myself at the minute. I'm trying but, I don't know, it's best for yourself isn't it...Just look after yourself I suppose and not lose weight as such, it's just eating healthy isn't it.

Interviewer:

Is that to feel better?

Participant - female

Yes because I've been sluggish lately, so like instead of having chocolate or anything I have an apple. You know that's what puts weight on for me, chocolate...

... if someone came up and said, do you want a Mars or do you want an apple, I'd have a Mars, because I need something sweet...sometimes I'll have an orange or an apple and you're still getting your sweetness, it satisfies your sweetness but obviously it's a lot more healthy isn't it?

...Yes, you're willing, you're willing to go for the brown but you want mayonnaise on it so it still kind of fats isn't it really.

## **Theme 2 – Individual responsibility**

This has been alluded to in the previous examples, where both members of staff state at different times that there are no real obstacles to eating a healthier diet and that ultimately it is up to your own individual responsibility. The element of individual responsibility came through strongly from other participants. The following excerpt is from an interview with two staff members from the chip shop control group, however, since the baseline questionnaire had been undertaken, they had been visited by someone else from the Council, who was not associated with the HBA, but sounded very similar. From this starting point, the interviewee seemed somewhat antagonistic towards public health interventions for takeaways,

...we've been here for thirty-odd years and been very successful, how likely are we to change?...it's your own responsibility what you eat. You CANNOT (she emphasises 'cannot' quite strongly) tell people what to eat...it's their choice. They're telling people not to smoke, not to drink, not to do whatever to just, you know. I can see where they are coming from and I can see the point. Yes encourage people etc, but you'll never stop somebody who goes to the supermarket fills their trolley full of CRAP, you know, because they might like be on a low income and that's what they fill it with.

However, as an individual she was influenced by her own health problems and had a positive attitude towards healthier options. For example, when working shifts, they reported staff tended to bring their own food in and only have a 'chippy tea' as a treat, and would usually have a small portion. The staff also tried to offer alternatives however they reported that the customers did not show a willingness to engage with the healthier messages.

...I said, 'Do you want your fish lightly battered?' 'No I want it fully battered and I want salt and plenty of it on.'...All you can say is would you like a lightly battered fish? You can't tell them they've GOT to have it lightly battered and you can't spend ten minutes explaining to them WHY they should do it because there's fats in this and fats in that.

... They'll say, there's not enough on there, I want a large portion so you're stuck there. They want a large amount don't they?

The changes to dietary behaviours were more complex and influenced by a number of practical barriers as well as health and weight issues.

### **Theme 3 – Practical barriers**

The main practical barriers identified were low income, poor cooking skills, family resistance, cost, inconsistent messages, time and number of customers. However there were some opposing views for whether the workplace posed a practical barrier and some participants seemed unable to decide if the issues highlighted did pose actual barriers.

For the wider public it was suggested that low income (as highlighted above) and poor cooking skills meant people were less likely to eat healthily. One takeaway owner said,

Nobody can cook these days. They can't make a wholesome stew or a wholesome soup because they don't know how to do it.

Both participants from the takeaway agreed that resistance from family members posed barriers as it became frustrating and wasteful if healthier food was provided and not eaten.

I just try to be healthy but if I cooked...something healthy mine all moan at me because they want chips...I try to cook chips at home once or twice a week, and then we'll have rice and potatoes and vegetables and things. But they all moan so it's hard work.

... I give everybody fruit when they take their dinners every day and then when they come in I say, 'Have you eaten it?' I'm sure my husband chucks his away or gives it away but he'll tell me he has eaten it.

...Well my son I gave him brown bread, brown barmes, wholemeal, and he'll come in and he'll say, 'I don't like them I want white ones again.' What do you do? You either waste money and give them something they don't like or go back to white bread. Because we like to give them what they want, so it's hard that, it is hard.

... often my daughter eats something and my son will eat something different, so that's two different meals...and it costs more money.

Both participants also felt that healthy eating messages were always changing and thus people would not take any notice of them. However, the same participant demonstrates some inconsistency in her views later on in the interview by stating,

I don't think it is difficult, I don't think it is difficult to eat any particular way, everything's available twenty-four seven. There's nothing that isn't available so you don't have - short of being housebound you know, no restrictions...

When asked about the practicality of eating healthily in the takeaway as a workplace, again the staff did not feel this posed any barriers as they rarely ate there and chose healthier options or brought food from home.

Yes, it's difficult it's a bit academic that because we don't eat here. I mean Thursday is the only day when three of us eat here...so Thursday's our treat so we always have fish, chips and peas.

We do all have lightly battered fish.

Yes and just a few hand cut chips.

We don't have a lot.

We don't eat a full portion.

So I mean in this instance it's not really... we'd each bring a sandwich in or pasta or something.

In contrast to the takeaway, a participant from the cafe stated that the main barrier was the setting itself.

The challenge is having the stuff on hand at work all day that's the only thing that prevents me (eating healthily).

For the family running the public house, time was identified by all three interviewees as the main practical barrier, followed by the number of customers.

...it's time and depending on how many people are in the pub at that time...last night we all sat down to eat and within two minutes of the pub being empty and the food on the table, somebody comes in, then somebody else, so your food's gone from nice and hot to stone cold when you get it. So it's time and people in the pub.

Despite this they demonstrated a positive attitude by trying to plan ahead, always eating breakfast and going out when possible to buy fresh fruit and healthier snacks for during the day.

#### **Theme 4 – Society and upbringing**

The final key theme to emerge was the influence of society and upbringing on dietary attitudes and behaviours, including peer pressure, the media and convenience. There was recognition from participants that their experiences when growing up with food had influenced them as individuals but this did not always translate into them being able to always maintain the healthier options or pass this onto their own families, (See example presented in theme 1) indicating the contribution from both family upbringing and external forces in society.

One participant from the takeaway stated,

...But I don't know how much, because of eating habits, how much is what they've learned over the generations. It's what they see isn't it? It's what they're brought up on.

The other participant further emphasised this on a personal level, but highlighted that the generational influence had not been passed onto her son who had less healthy food preferences.

I've been brought up on proper wholesome meals that my mum's made and when my gran lived she made us things for us all coming in from school and things like that, but things change don't they. My son will not eat a roast dinner. I have to force him to eat one on a Sunday. I can see his pulling his face but once a week I try and make him have that, but he won't touch anything. He'd have a steak pie from here but if I gave him Shepherd's Pie at home he won't touch it. So it is I suppose it's my fault and I should say you are going to get it.

One participant from a public house felt her attitudes were influenced by the media and peer pressure.

It's the press isn't it - all these stars at the minute, how they look, how they eat... it's such a big influence it's everywhere isn't it, newspapers, magazines, posters, television, everywhere you look.

But her behaviours were more practically linked to convenience of what was on their menu in the pub, which she felt was fairly healthy and therefore seemed satisfied with this.

Well I pretty much go off the menu we've got here because it's the only thing we can get time to do because we're down here, it's only there to just go and make it ourselves. It's pretty healthy anyway so we eat off that.

A participant from the takeaway also stated that ease was more important for some people.

Yes I think a lot of it's for easiness as well. I'd rather take mine in a café in Wigan and pick off a proper menu but a lot of parents can't be bothered can they. They just go in MacDonald's or KFC or Burger King and think, right there you are, what do you want? And it's cheaper than going in a café as well.

## **Chapter 4**

### **Discussion**

#### **4.1.1 Overview**

The study aimed to investigate whether the Wigan Borough HBA influences the dietary attitudes and behaviours of awardees. A questionnaire was used to investigate the dietary attitudes and behaviours of awardees at baseline and post HBA intervention for the intervention group and at baseline and follow up for the control group. This sought to assess whether the HBA intervention influenced attitudes and/or behaviours. It sought to inform a basic overview of the links between dietary attitudes and behaviours enable the formation of a set of recommendations to inform best practice.

There are a number of limitations with the quantitative data presented in the results section including a very small sample size. This makes identifying trends, significance and interpretation for a wider audience very limited. For this reason a follow up semi-structured interview was used to gain qualitative data that sought to explore more in depth experiences. Therefore, the main focus of the discussion will be based on the findings from the qualitative data which provides a richer insight into the experiences of participants, supported by the questionnaire data where applicable.

#### **4.1.2 Key Findings**

The key findings demonstrate equivocal support for the main hypothesis. There is a complex relationship between dietary attitudes and behaviours, and a range of

factors that influence them. From the key themes, clear similarities and differences between the control and intervention groups can be identified.

For the intervention group, participants appreciated the learning and support provided and clearly felt there was a strong level of input available. They felt more enabled to promote healthier options and recognised the benefits of the award for the business and customers. This was supported by Holdsworth et al. (2000) who found that the heartbeat award made it possible to maintain a certain level of healthy eating knowledge and that it increased the ease of access to healthier options. However, they found that the level of input was insufficient to further influence dietary behaviours. One of the recommendations from their study was that more funding should be made available to ensure intensive input and effective monitoring. The present study supports this, as the appreciation of the intensive support provided is one of the key findings.

Some participants reported strong influences on their individual dietary attitudes and behaviours from the HBA, where others demonstrated less change or reported no influence. The staff members who had had most direct contact with the HBA team tended to be most positive overall.

The intervention was reported to add value, raise awareness, enable and support the businesses to offer and promote healthier options, but this did not necessarily impact positively or negatively on individuals' attitudes or behaviours. However, all participants from the intervention group still wanted to promote healthier options and wanted to achieve the award. Many were already positive at baseline and additional factors to the HBA were identified as having an impact on their attitudes

and behaviours. In contrast, the control group did not report any of these benefits, as they had not undertaken the HBA intervention.

The key influencing factors on the intervention group that were additional to the HBA, were similar to those in the control group, particularly weight, health and family. A number of participants from both groups were following weight loss diets or were eating in response to health conditions, either their own conditions or other family members. For many, the HBA complimented and supported positive attitudes and behaviours, and added value to participant's experiences. For some who were also taking part in slimming clubs they reported that they had lost more weight since taking part in the HBA and the slimming club simultaneously.

The study supports the evidence that many meals are eaten outside of the home, when and where it is convenient, as demonstrated in the 'practical barriers' theme, where time and ease of access to specific types of food is highlighted by the control group as an important factor to eating healthily. They believed that there was not enough time whilst serving customers to try and 'sell' healthier options and in contrast to the evidence presented earlier, that demonstrated people aspire to eating healthily, some control group participants reported that their customers did not follow this trend.

There were similarities within the intervention group where time to prepare for the award was identified as being a challenging factor when running a business. One participant found it particularly difficult to find the time to provide their recipes to the HBA team and it was proving to be a barrier to achieving the award. During the process of collecting the questionnaire and interview data, it was evident that all participants were pushed for time and there were numerous interruptions where

people were required to serve customers or had other engagements – despite mutually agreeing the time of the visits to try and minimise disruption. This was also verified by the HBA team, who reported that a key challenge was getting enough time to work closely with some of the businesses. The low numbers through the award during the study period may be partly due to the process and level of input required from the businesses themselves, who may not have had time to complete all the requirements, particularly during a challenging financial climate. Where less money is available it may be an option of buying less food or poorer quality, less healthy, cheaper food.

Showing some contradiction to this, the control group also considered that despite practical barriers, it should always be possible to eat healthily if a person chooses to do so, it is their own responsibility. This is supported by some of the key food issues identified by the Cabinet Office Strategy Unit Report (2008). For example, people saying they want healthier, convenient and tasty food, but then not following through with their positive intentions, demonstrating the intention- action gap. People often know what they 'should do' and what they aspire to, but their positive intentions are not followed through and are blamed on real or perceived barriers, thus demonstrating the complex links between attitudes and behaviours.

The control group also highlighted the impact of society and upbringing more than the intervention group. This demonstrates some recognition of the wider determinants of food and health and the complexity of attitudes and behaviours when the influencing factors are combined. Society was perceived to pose particular challenges as some participants painted a very negative image of current culture, level of education and food habits, and felt strongly that people

could not be dictated to and were unlikely to change. The intervention group seemed more focussed on themselves and their business than the wider issues within society and from their upbringing, probably due to the focussed work they had put into developing themselves for the award.

#### **4.1.3 Strengths and limitations of the structured questionnaire**

The use of a structured questionnaire was deemed a practical way of collecting a large number of clearly coded responses that could be easily collated and analysed. However, the small sample size achieved posed a key limitation, as the data set was too small to be able to generate meaningful trends or generalisations to other populations.

The questionnaire itself appeared to present some confusion as participants did not always understand the questions, or as highlighted by Bowling (1997) participants may have differing perspectives, or the same words or concepts may have different meanings for different people, which produced some contradictory responses. For example, one question sought to assess whether staff felt there were healthy options available for them on site at meal times. Some responded that it was easy – when in fact the business did not have any healthy options, but they were referring to the fact they could get healthier food easily if they brought it in. Others correctly responded that it was easy because there were options available, so comparing the two answers would be misleading and weakens the value of the data. Also, there is scope for framing bias as the pre-coded response choices may have influenced people's responses or may not have been appropriate for peoples' desired answers, thus not providing an accurate representation of their experiences.

The questionnaires and the interviews were completed in the business, with the HBA officer or researcher present to try and increase compliance. This may have made people feel uncomfortable and promoted social desirability bias (Bowling, 1997). A large number of venues were very noisy due to equipment and customers, and some staff had to serve customers during completion of the questionnaire / interview which made it difficult to concentrate and may have put pressure on participants to complete as quickly as possible, thus not eliciting well thought through or in depth responses.

The use of this structured questionnaire is also in question when Bowling (1997) highlights that the method is more appropriate for gathering factual information, rather than attitudes and behaviours as it can be subject to error. Subsequently, this supports the introduction of the semi structured interview, as this provided the opportunity to investigate the complexities of people attitudes, behaviours and experiences more thoroughly than the questionnaire, although it would not quantify the data to address the key objectives.

#### **4.1.4 Strengths and limitations of the interview**

The use of the interview as a method of qualitative data collection to study attitudes and behaviours is supported by Pope and May, (1995) who state that,

It would be invidious to suggest that one or the other source was the more valid; suffice it to say that different research settings and different methods allow access to different levels of knowledge...The goal of qualitative research is the development of concepts which help us to understand social phenomena in natural (rather than

experimental) settings, giving due emphasis to the meanings, experiences, and views of all the participants.' [And that]... Experimental and quantitative methods are less well suited to answer these questions.... In addition qualitative work can reach aspects of complex behaviours, attitudes, and interactions which quantitative methods cannot.

Pope and May (1995) also highlight that qualitative methods score well for validity, as they explore actual behaviour and meaning when people describe their experiences, attitudes, and behaviours. The interview process allowed more complex issues to be investigated and answers could be clarified or probed further to prompt greater depth.

However, there were limitations to the interviews. Despite the small sample size, the interview process was time consuming and thus resource intensive and expensive for both researcher and participants, and the small sample size may mean that the data still may not be very representative. Some participants seemed uncomfortable being recorded, although all gave consent and it did allow for better interaction, as the researcher did not have to focus on taking notes. The data was challenging to collate and analyse and some of the recordings were difficult to hear at times due to background noise.

Bowling (1997) highlights that the skills of the interviewer are important. Some believe it is important to be neutral, non directive, using encouraging nods rather than agreeing or disagreeing. From the transcriptions, it is recognised that the researcher used some questions that may have led, biased or confused participants and had a tendency to be very enthusiastic during periods of positive

discussion. In some cases this can be appropriate when addressing attitudes and behaviours that are under reported (Bowling, 1997). Kuper, Reeves and Levinson, (2008) concur that,

Research questions and findings are therefore invariably and directly influenced by the researchers' perspectives and by the unique perspectives of their research participants... It is distinctly different from what the quantitative world would call "bias," because the term bias implies that there is a true reality that the researchers' perspectives are hindering them from seeing.

In summary the study demonstrates a number of strengths and weaknesses, which are due to limitations from the sample size, methodology and interviewer skills however the qualitative data and key themes provide some key insights and implications for professional practice and potential future research.

## Chapter 5

### Conclusions

Overall, the majority of participants involved in the HBA demonstrated positive dietary attitudes and behaviours. However it is not possible to quantify the impact of the HBA on participant's dietary attitudes or behaviours from baseline to follow up, due to the small sample size. From the qualitative data five themes emerged from the intervention group and four from the control group, which highlight the key pros and cons of the HBA and the complex interrelationship between dietary attitudes and behaviours.

There was a mixed response from intervention participants regarding the direct impact of the HBA on personal dietary attitudes and behaviours, from extremely positive change to no influence. Where no influence or change was reported, in general, participants still showed positive attitudes towards the receipt and recognition of the award and wanted to promote healthier options for customers. So the fact that the intervention had not directly impacted them as individuals, does not appear detrimental to the implementation of healthier eating practice, although again this was not quantifiable and those who experienced positive change, may be more proactive in promoting healthier options.

#### 5.1.1 Recommendations for professional practice and future research

The themes that emerged from the intervention group demonstrate that the high level of support and expertise available was important and that this should be maintained.

A streamlined approach to the implementation of the award should be considered to manage the time commitment required, whilst maintaining a high level of support. A more flexible or directive approach may be appropriate for some businesses that do not have the time or capacity to fulfil the award criteria.

The intervention should try and work directly with as many staff from the businesses as possible, as those who had had most contact with the team, demonstrated more enthusiasm and dedication. Where this is not practical, the lead business contact should be enabled and strongly encouraged to cascade their learning to other members of staff.

Promotion of the award to engage with new businesses should focus on the benefits they will receive from the intensive input provided – knowledge, support, enablement to promote healthier options, added value alongside other interventions such as weight loss and other health gains, positive recognition for the business, and customer satisfaction.

Businesses should be assessed for their readiness and motivation to change prior to the intervention to ensure that the HBA officer's time is used appropriately.

Future research should focus on quantifying behaviour changes for staff and customers associated with food awards and the impact of those changes on health outcomes.

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## Appendices

### Appendix 1

#### HBA Appraisal form and 75 question assessment



## Appraisal Form

On enquiry: Date: ____ / ____ / ____ Initials: _____	On allocation: Date: ____ / ____ / ____ Initials: _____
--	---

Business Name: _____ Contact: _____ Address: _____ _____ _____ Postcode: _____ Tel number: _____ Mobile number: _____ Email: _____ Website: _____ <b>BEST TIME TO CALL:</b> _____	How did you hear about the award? _____  Motivation? _____  Timescale? _____  Expectations? _____  Nutritional/ Food / Safety Qual?
---	--

When did you last have an EH inspection?    /    /    Ave frequency    months
---

Type of Premises: Workplace    restaurant    gastropub    sandwich bar    takeaway    retailer    manufacturer    other _____
Number of Premises: _____      Number of employees: 1-3    4-6    6-12    12+ How many handle food? _____ How many of these have formal food hygiene training? _____ <span style="float: right;">if yes: SFBB / Other</span> Food Hygiene MS: yes / no      _____
What meals do you serve? Breakfast    snacks    lunch    evening meal    24hour    functions    all day    Other _____
How are meals produced? _____ (1)Fresh to order    (2)Meals pre-prepared on site from raw    (3)Pre-prepared, bought in, heat & serve
How often do you change your menu? _____ wks Do you currently have any healthier options on your menu?    YES    NO
Is your food premises?    SEATED/WAITED    SEATED/SELF-SERVE    TAKEAWAY

Opening times: _____	Number of customers _____ /wk
Are you happy to participate in project research? YES NO	

Do you have baby changing facilities? YES NO  
 Are you a breast feeding friendly premises? YES NO

(if NO do they want BFF info? YES NO)

<input type="checkbox"/> Best Practice achieved date: / / <input type="checkbox"/> Healthy Business Award date: / / Follow up dates: / / / / / /	Notes:
	Ref:

Checklist for premises

- Appraisal Form
- Best practice 75 questions
- Recipes
- Menus
- Recent Inspection info
- Hygiene Training
- Facilities Info

## 75 Question Assessment

### Best Practice

	<b>Procurement</b>	<b>Initial Visit Y / N</b>	<b>Comments</b>	<b>Date Achieved</b>	<b>E / D</b>
1	Suppliers doc correctly in FSMS?				E
2	Local suppliers used where possible?				D
3	Products traceable back to suppliers?				E
4	Healthy substitutions used where pos?				E
5	Low fat/baked crisps available?				E
6	Fair trade products used? (details)				D
7	Organic Products Used (details)				D
	<b>Menu Planning</b>				
8	Reduced portion size available/light bites?				E
9	Salad/Veg only supersized products?				E
10	Kid's menu have adult Healthier options?				D
11	U/S fruit juice, bot H2O and diet soda?				E
12	Free tap water available on request?				D
13	Salt cellars removed from tables?				E
14	L/F, polyunsat.spread portions available?				E
15	L/F salad dressings available?				E
16	Healthy options actively marketed?				E
17	Sauces served on the side not plate?				E
18	Do salt cellars have min amount of holes?				
19	Individual starters < main course?				E
20	Soup: veg/broth based always available?				E
21	Thicker chips/wedges?				E
22	Potato/rice: non enriched dishes available?				E
23	Pasta/rice: w/wheat alternative (1/5dishes)?				E
24	Veg options available at all times?				E
25	1 veg option not cheese/pastry base?				E
26	Is there an U/P lean meat or U/C fish?				E
27	Oily fish always available?				D
28	L/F cream,yog, crème fraiche, ice cream?				E
29	Cream etc. served separately?				E
30	Fresh fruit always available?				E
31	Light Fruit desserts available?				E
32	Carb side orders (breads, pots)?				E
33	Wholegrain breads available?				E
34	Low sugar/fat snacks available				E
35	Larger portions of side salads/veg offered?				D
	<b>Kitchen Practice</b>				
36	Veg,salad,garnish served undressed?				E
37	Food baked/grilled where possible?				E
38	Chips/Wedges oven baked?				E
39	Veg steamed/balanced not boiled?				D
40	Sandwiches,pots,toast available naked?				E
41	L/F spreads used in recipes?				D
42	Semi/skim milk used in adult beverages?				E

43	Red fat mayo/salad cream condiments?			E
44	Fat trimmed and drained from meat?			E
45	Skin removed from poultry (except roast)?			E
46	Spray oil rather than shallow frying?			D
47	Red fat cheeses available?			D
48	Strong cheese used to reduce amount?			D
49	Mono/poly unsat. oils used for frying?			D
50	Oil heated to correct temp when frying?			D
51	Red sugar amounts in desserts where app?			E
52	Red/zero sugar canned foods used?			D
53	Veg/pasta boiled without added salt?			E

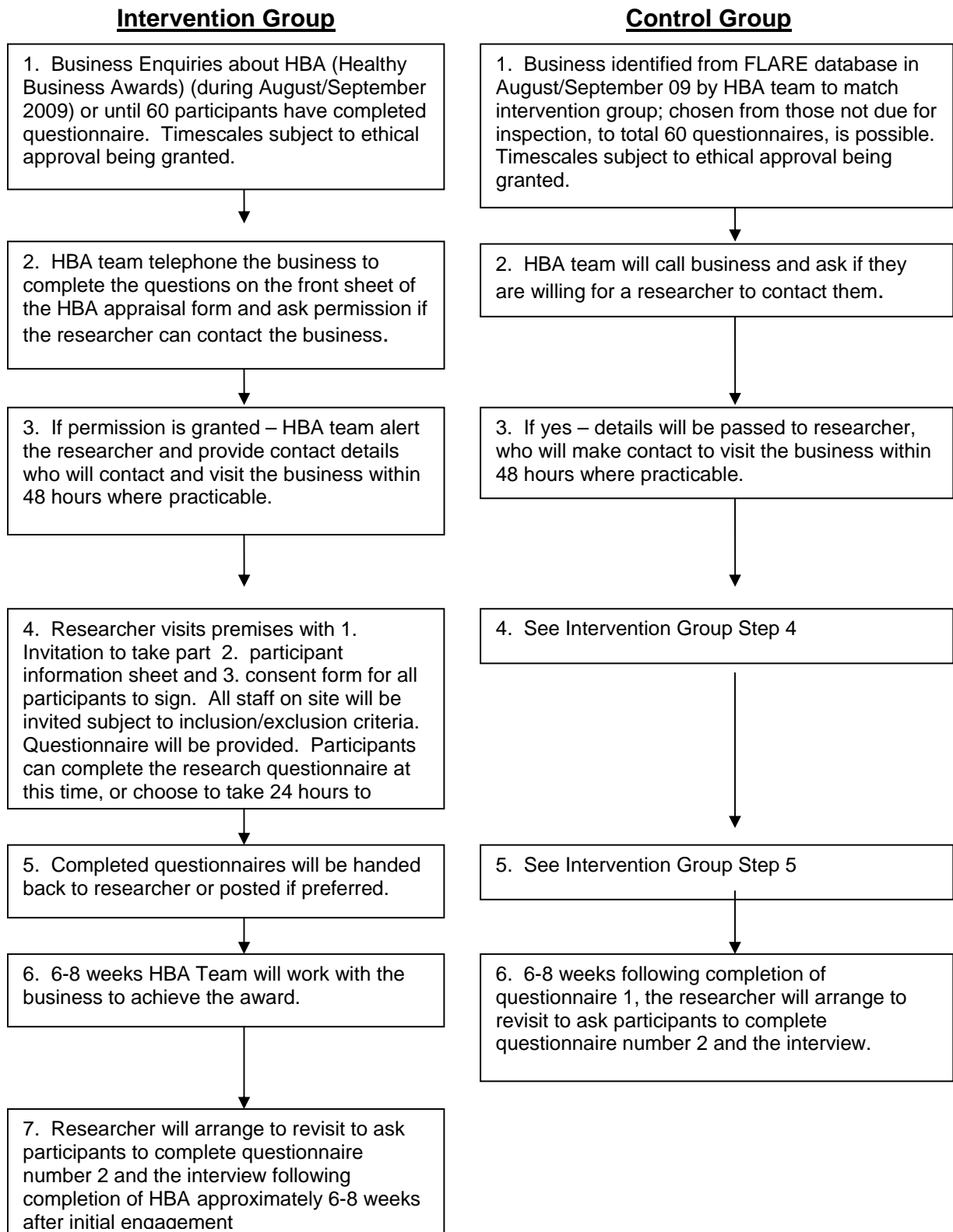
**Best Practice**

	<b>Kitchen Practice cont..</b>	<b>Initial Visit Y / N</b>	<b>Comments</b>	<b>Date Achieved</b>	<b>E / D</b>
54	Salt in recipes been minimised?				E
55	Red/zero salt canned foods used?				D
56	Documented recipe changes for inspection?				E
57	Staff understand why changes made (nutr)?				E
	<b>Provision of Information</b>				
58	Current Food Safety Man System doc?				E*
59	Bus.policy doc(salt,sugar,fat control)?				E
60a	Recipe spec sheet for Healthy dishes				E
60b	Recipe spec sheet for all dishes?				D
61	Info for customers - HC marketing by bus.				E
62	Allergy info available?				E
63	Small portion info available?				E
64	Healthy options indicated on menu?				E
65	Separate sheets with full recipe Nutr Info?				D
66	Diet systems link with PCT local systems?				D
67	Promotion HBA/HC displayed as appr?				E
68	Staff instructed on HC customer advice?				E
69	Healthy eating promo info avail. on site?				D
70	Documented training in Food Hygiene?				E*
71	Food Hygiene MS SFBB or equivalent?				E
72	Induction				D
73	Nutrition				D
74	TS relevant licenses displayed?				E*
75	Prices displayed where food is chosen?				E*

**Inspection:**

## Appendix 2

### Study design flow chart



**Appendix 3**

**Ethics letter**

## **Appendix 4: Participant literature**

### **A. Participant information sheet**



#### **PARTICIPANT INFORMATION SHEET**

##### **Exploration of the dietary attitudes and behaviours of staff in food outlets in the Wigan Borough**

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully, and discuss it with others if you wish. Ask the researcher if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

##### **What is the purpose of the study?**

The purpose of this study is to investigate the dietary attitudes and behaviours of staff (aged 16-65 years) who work in food outlets in the Wigan Borough - for example managers, catering staff and the wider team within the food outlet. The findings will be written up and will support the development of food and health interventions in Wigan Borough.

##### **Why have I been chosen?**

You have been chosen because you work for / own a food outlet within the Borough of Wigan and have experience of working in the food industry.

##### **Do I have to take part?**

It is up to you to decide whether or not to take part. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not lead to any adverse effects or affect your rights in any way.

##### **What will happen to me if I take part?**

If you decide to take part, you will be given this information sheet to keep and asked to sign the consent form. A researcher from the Department of Biological Sciences at the University of Chester will then contact you, to arrange a time for them to visit you. At this meeting you will be given the opportunity to ask any questions and be invited to complete a questionnaire about your dietary attitudes and behaviours. The questionnaire will take a maximum of 10 minutes to complete. 6-8 weeks after the initial visit, the researcher will contact you again to arrange a time to complete a follow up questionnaire. No participants will be identifiable in the final report. You would be required to commit to the research for this time period (i.e. the next 6-8 weeks) and it is essential that you are working in this organisation during this time or we will not be able to use your data. You will also not be eligible to take part in the study if you are on a therapeutic diet (e.g. gluten free), or if you are currently pregnant or breast feeding.

**What are the possible disadvantages and risks of taking part?**

There are no disadvantages or risks foreseen in taking part in the study.

**What are the possible benefits of taking part?**

By taking part, you will be contributing to the development of food and health interventions in your local community.

**What if something goes wrong?**

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact: Professor Sarah Andrew, Dean of the Faculty of Applied and Health Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ. Tel: 01244 513055.

**Will my taking part in the study be kept confidential?**

All information which is collected about you during the course of the research will be kept strictly confidential so that only the researcher carrying out the research and colleagues supporting the research will have access to such information.

**What will happen to the results of the research study?**

The results will be written up into a report for a Public Health Nutrition Masters dissertation. It is hoped that the findings may be used to inform the future developments of the food and health interventions. Individuals who participate will not be identified in any subsequent report or publication.

**Who is organising and funding the research?**

The research is funded, organised and carried out by the Biological Sciences Department at the University of Chester. Support will also be provided by NHS Ashton Leigh and Wigan - department of Public Health and The Healthy Business Award Team from Wigan Council.

**Who may I contact for further information?**

If you would like more information about the research before you decide whether or not you would be willing to take part, please contact:

Emma Bashall  
c/o Chester University  
Department of Biological Sciences  
Parkgate Road, Chester,  
Cheshire,  
CH1 4BJ

Telephone:

Email:

**Thank you for your interest in this research.**

## B. Consent form



### CONSENT FORM

**Title of Project:** Exploration of the dietary attitudes and behaviours of staff in food outlets in the Wigan Borough

**Name of Researcher:** Emma Bashall

Please tick the box if you agree with the statement:

1. I confirm that I have read and understood the participant information sheet for the above-named study, and have had the opportunity to ask the lead researcher any questions.
2. I understand that my participation is voluntary, and that I am free to withdraw from participating in the study at any time, without giving any reason and without my rights being affected.
3. I agree to take part in the above study.

Name of Participant \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_.

Name of Person taking consent \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_.  
(if different from researcher)

Name of Researcher \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_.

*(1 for participant; 1 for researcher)*

**C. Study Questionnaire**

**Questionnaire**

**Unique ID**

**Male/Female**

**Age**

**Job Title**

**No of Employees** 1-3                  4-6                  6-12                  12+  
(Please circle)

**Type of Business** (*Please circle*)

**A.**

Independent Business	Chain
----------------------	-------

**B.**

Workplace	Restaurant	Gastropub	Sandwich Bar
Takeaway	Retailer	Manufacturer	Other

**Type of Meals** (*Please circle*)

Breakfast	Snacks	Lunch	Evening Meal	24 Hour
Functions	All Day	Other		

Please tick here if you agree for the researcher to share this information with the Healthy Business Award team



11. How much encouragement for eating low-fat foods do you get from your co-workers?

1                      2                      3                      4                      5

12. How much encouragement for eating low-fat foods do you get from close friends and family?

1                      2                      3                      4                      5

**1 = Extremely Important, 5 = Not Important**

13. How important to you is eating low-fat foods?

1                      2                      3                      4                      5

**1 = Extremely Confident, 5 = Not Confident**

14. I feel confident that I know what foods I should be eating to have a Healthy Diet.

1                      2                      3                      4                      5

15. How high in fat is your overall diet? **1= Very High, 5= Very Low**

1                      2                      3                      4                      5

16. How high in sugar is your overall diet? **1= Very High, 5= Very Low**

1                      2                      3                      4                      5

17. How high in salt is your overall diet? **1= Very High, 5= Very Low**

1                      2                      3                      4                      5

18. How confident are you that you will decrease the amount of fat in your diet during the next 6 months?

1                      2                      3                      4                      5

19. How confident are you that you will eat more fruits and vegetables during the next 6 months?

1                      2                      3                      4                      5

The following questions ask about change you have made, or may make in the way you eat.

**1 = Definitely, 5 = Definitely Not**

20. Over the next 6 months, do you plan to cut down on fats?



#### **D. Interview guide questions**

1. What were your expectations for the HBA? (eg for the process and outcomes / what you would have to do and what you would gain / achieve)
2. What were the main challenges / barriers you have faced whilst working towards the HBA?
3. What do you feel are the key benefits of taking part in the HBA?
4. What are the main influences on your dietary attitudes? (ie the way you think about food and health) Why? AND / OR
5. How do you feel that the HBA has influenced your dietary attitudes? (ie the way you think about food and health) Why?
6. What are the main influences on your dietary behaviours? (ie How and what you eat) Why? AND / OR
7. How do you feel that the HBA has influenced your dietary behaviours? (ie the way you think about food and health) Why?

Prompts were used to try and delve deeper if participants were struggling to expand their responses.

The control group were unaware of the HBA intervention and thus the following questions were used as a guide to further explore the influences on their dietary attitudes and behaviours:

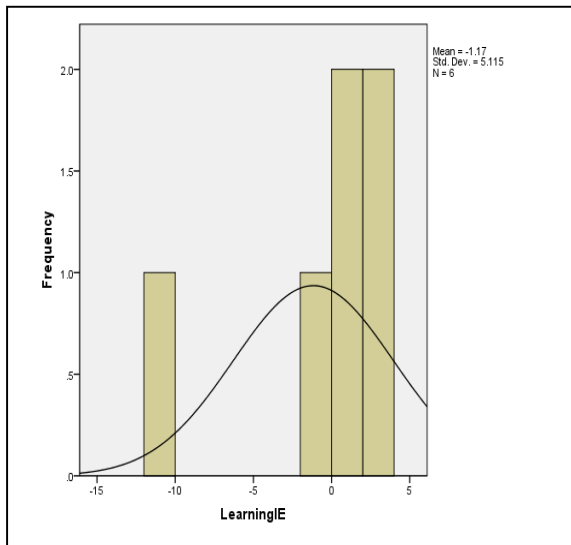
8. What are the main influences on your dietary attitudes? (ie the way you think about food and health) Why?
9. What are the main influences on your dietary behaviours? (ie How and what you eat) Why?
10. What are the key challenges / barriers that you face to eating well? (healthily)
11. Who or what are the biggest influences on what and how you eat?

## Appendix 5

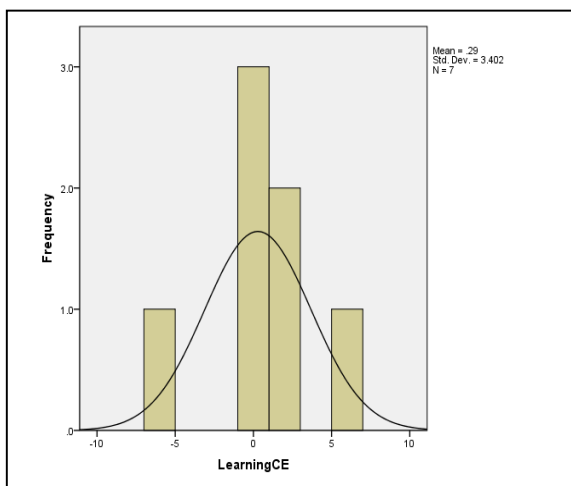
Additional results tables

**Table 7: Enabling Factors - Intervention and control group, pre and post questionnaire scores, for enabling factors.**

QUESTIONNAIRE SCORES – ENABLING FACTORS							
Intervention group				Control group			
Unique identifier	Pre	Post	Change	Unique identifier	Pre	Post	Change
001	21	10	-11	60	15	17	2
002	13	14	1	61	19	19	0
004	12	14	2	62	15	20	5
005	7	10	3	63	21	21	0
006	13	13	0	64	20	22	2
007	17	15	-2	65	22	16	-6
				66	18	17	-1



**Figure 4**  
The histogram for the intervention group demonstrates that the data is not normally distributed.



**Figure 5**  
The histogram for control group demonstrates that the data is not normally distributed.

**Table 8: Independent samples T test for intervention and control group for enabling factors. Group statistics.**

GROUPS	N	MEAN	STD. DEVIATION	STD. ERROR MEAN
Diff Enabling- Intervention	6	-1.17	5.115	2.088
Diff Enabling- Control	7	.29	3.402	1.286

**Table 9: Independent samples T test for Equality of Means for enabling factors.**

	T	DF	SIG. (2 TAILED)	MEAN DIFFERENCE	STD. ERROR DIFFERENCE	95% CONFIDENCE INTERVAL OF THE DIFFERENCE	
						Lower	Upper
Diff - Equal variances assumed	-.612	11	.553	-1.452	2.374	-6.677	3.772
Diff - Equal variance not assumed	-.592	8.8492	.569	-1.452	2.452	-7.051	4.146

The T-test was used to determine the difference in the means between intervention and control groups in enabling factors. Because the data is not normally distributed – see histograms above, SPSS was used to perform the test without assuming equal variances. The table above shows the SPSS analysis using assumed equal and unequal variances. Both show t-test of -0.612 and -0.592 respectively and since the data is not normally distributed, the result of ‘equal variances not assumed’ from the data will be used in the result interpretation. Although the mean difference in both groups was -1.452 (Standard error 2.3 and 2.4), the P value of 0.569 (>0.05 significance level) shows that there is insufficient evidence to show that there is statistical difference in change from pre and post, in both intervention and control groups at the enabling factor level.

**Table 10: T test: independent samples, assuming unequal variances in enabling factors (using excel)**

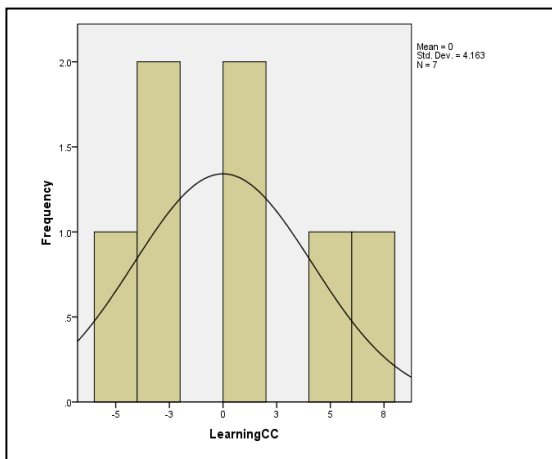
<b>T-TEST: INDEPENDENT SAMPLES, ASSUMING UNEQUAL VARIANCES IN ENABLING FACTORS (USING EXCEL)</b>		
	<i>Enabling - Variable 1</i>	<i>Enabling - Variable 2</i>
<b>Mean</b>	<b>-1.17</b>	<b>0.29</b>
Variance	26.17	11.57
Observations	6.00	7.00
Hypothesized Mean Difference	0.00	
df	8.00	
<b>t Stat</b>	<b>-0.59</b>	
<b>P (T&lt;=t) one tail</b>	<b>0.29</b>	
<b>T Critical one tail</b>	<b>1.86</b>	
<b>P(T&lt;=t) two-tail</b>	<b>0.57</b>	
<b>t Critical two-tail (from previous table)</b>	<b>2.31</b>	

The analysis in excel shows the t Critical two tail test as 2.31, which would need to be exceeded in order for the difference between the means of the scores in both intervention and control groups at predisposing factor level to be significant at the 5% level. Thus this test also demonstrates that it is not a significant result.

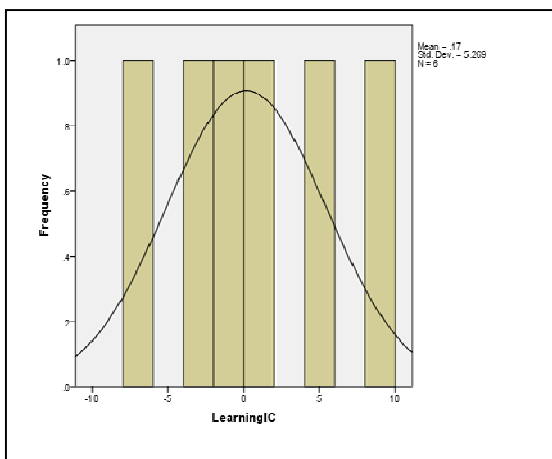
**Table 11: Change related factors**

**Intervention and control group, pre and post questionnaire scores, for change related factors.**

QUESTIONNAIRE SCORES – CHANGE RELATED FACTORS								
Intervention				Control				
Unique identifier	Pre	Post	Change	Unique identifier	Pre	Post	Change	
001	26	19	-7	60	22	17	-5	
002	22	19	-3	61	18	15	-3	
004	17	21	4	62	26	22	-4	
005	9	17	8	63	22	23	1	
006	16	16	0	64	16	17	1	
007	23	22	-1	65	16	22	6	
				66	18	22	4	



**Figure 6**  
The histogram for the control group demonstrates that the data is not normally distributed.



**Figure 7**  
The histogram for the intervention group demonstrates that the data is not normally distributed.

**Table 12: Independent samples T test for intervention and control group for Change related factors. Group statistics.**

GROUPS	N	MEAN	STD. DEVIATION	STD. ERROR MEAN
Diff Change- Intervention	6	.17	5.269	2.151
Diff Change- Control	7	.00	4.163	1.574

**Table 13: Independent samples T test for Equality of Means (Change factors).**

	T	DF	SIG. (2 TAILED)	MEAN DIFFERENCE	STD. ERROR DIFFERENCE	95% CONFIDENCE INTERVAL OF THE DIFFERENCE	
						Lower	Upper
Diff - Equal variances assumed	.064	11	.950	.167	2.614	-5.587	5.920
Diff - Equal variance not assumed	.063	9.513	.951	.167	2.665	-5.814	6.147

The T-test was used to determine the difference in the means between intervention and control groups in enabling factors. Because the data is not normally distributed – see histograms above, SPSS was used to perform the test without assuming equal variances. The table above shows the SPSS analysis using assumed equal and unequal variances. Both show t-test of 0.64 and 0.63 respectively and since the data is not normally distributed, the result of ‘equal variances not assumed’ from the data will be used in the result interpretation. Although the mean difference in both groups was -0.167 (Standard error 2.6), the P value of 0.950 and 0.951 (>0.05 significance level) shows that there is insufficient evidence to show that there is statistical difference in change from pre and post, in both intervention and control groups at the change related factors level.

**Table 14: T test: independent samples, assuming unequal variances in Change related factors (using excel)**

<b>T-TEST: INDEPENDENT SAMPLES, ASSUMING UNEQUAL VARIANCES IN CHANGE FACTORS (USING EXCEL)</b>		
	<i>Variable 1</i>	<i>Variable 2</i>
<b>Mean</b>	<b>0.17</b>	<b>0.00</b>
Variance	27.77	17.33
Observations	6.00	7.00
Hypothesized Mean Difference	0.00	
df	11.00	
<b>t Stat</b>	<b>0.06</b>	
<b>P (T&lt;=t) one tail</b>	<b>0.48</b>	
<b>T Critical one tail</b>	<b>1.81</b>	
<b>P(T&lt;=t) two-tail</b>	<b>0.95</b>	
<b>t Critical two-tail</b>	<b>2.3</b>	

The analysis in excel shows the t Critical two tail test as 2.3, which would need to be exceeded in order for the difference between the means of the scores in both intervention and control groups at predisposing factor level to be significant at the 5% level. Thus this test also demonstrates that it is not a significant result.