AN EXAMINATION OF THE STRATEGIES TO ADDRESS HEALTHY EATING FOR PARENTS OF PRE SCHOOL CHILDREN

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Obesity is a growing public health problem in the United Kingdom. This has been widely recognised by the government, society, medical profession and other healthcare professionals.

Childhood obesity is affecting children at a younger age and increasing their risk of developing chronic diseases in later life. The current interventions and strategies have focused on the school age population. Research has shown that about one third of children are already overweight by the time they start school. This supports the view that preventive interventions aimed at addressing childhood obesity need to start early in life. However, there are few strategies aimed at addressing obesity in the pre school population.

This literature review examines the strategies employed to address healthy eating for parents of pre school children. There is a strong body of evidence that parental dietary behaviour influences children. Healthy eating habits instilled early in life can reduce the prevalence of obesity later in life. Parents are a key factor in preventing the growing problem of childhood obesity. Therefore, the focus of health promotion initiatives should be on how to engage with parents so that they are motivated to address obesity in their families.

Studies have shown that education initiatives are not effective agents of behaviour change in isolation. In order for strategies addressing obesity to be effective, they need to combine education, with interactive methods such as practical help through healthy eating groups and one to one support. Health promotion recognises the need to consult and engage with people within the context of their community and cultural background. This would allow future interventions to be more sensitive to the needs of clients and therefore more effective.

This review identifies the main barriers to healthy eating and provides the evidence for targeting pre school children and their families.

Author Declaration

1. During the period of registered study in which this dissertation was prepared, the author has not been registered for any other academic award or qualification.
2. The material included in this dissertation has not been submitted wholly or in part for any academic award or qualification other than for which it is now submitted.
3. The dissertation is an original piece of work undertaken by the author.
4. The programme of advanced study of which this dissertation is part has consisted of:
   4.1 Four taught modules or equivalent
   4.2 Participation in research seminars
   4.3 Supervision tutorials

All the above were held at Bath Spa University

Signature

Surrinder Bains, June 2007

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CHAPTER 1 INTRODUCTION

1.1 Chapter Preface

This chapter gives my own professional interest in this subject and explains how obesity is seen by various professionals, the government and society together with how it is being addressed.

Whilst working as a health visitor, my experience has led me to question whether the present interventions in relation to obesity are effective. For example; a young single mother in temporary accommodation was advised about introducing her baby to home made food rather than using commercially prepared jars. She informed me that due to lack of cooking facilities, inadequate knowledge and skills regarding cooking, she only purchased convenience foods. She was in essence taking current and future health for granted.

The experience of providing advice that is regarded as unhelpful by the recipient taught me that encouraging healthy eating could highlight a need for which there was currently limited provision. At this time there were few facilities available to gain these skills that this client was able to access.

The experience of a young single mother with little support and limited knowledge and resources contrasts starkly with more affluent clients living in private accommodation in a supportive family setting. These clients generally eat a well balanced diet and are keen to extend this to their children. In these instances, giving advice and direction is generally all that is needed.

Health visitors have a public health role and this literature review will be of great interest to my colleagues in developing their knowledge and improving their practice.

1.2 Chapter Background

The task of facilitating a lasting change towards healthy eating seemed to be an enormous undertaking. However, addressing obesity early in life is the key to ensuring healthy eating patterns for future generations and interventions need to be targeted at this group.

This review examines how best to reach parents of pre school children in order to address childhood obesity. The *National Service Framework (NSF) for Children, Young People and Maternity Services,* states that 'action needs to take 'a life course' approach, which starts from birth and tackles the inequalities that exist between social groups,' (DoH: 2004b: 47).

1.3 Causes of Obesity

Being overweight was once viewed as a sign of health and wealth, as it was those who had money who could afford to eat well. Pariszkova and Hills (2004: 45) suggests this may stem from the belief that a degree of fatness is beneficial to health due to increased energy reserves and provides greater resistance to disease.

There is no one single identifiable cause for obesity and this remains a barrier for the development of effective preventive interventions.

> The House of Commons select committee(2004: 99) asked why obese people overeat and they found the following reasons were given, boredom, guilt, anger, guilt, shame, stress, because its there, loneliness, pressure from other people, happiness, going to start a diet tomorrow, revenge, depression, addition, habit, not appreciated, unfulfilled, unloved, pleasure, it's Sunday, comfort, holiday, frustration, unhappy and to celebrate.
>
> Lifestyles have become increasingly sedentary: the number of hours spent watching television has increased and a more automated lifestyle (increased use of domestic appliances and cars, along with more sedentary occupations) has reduced the amount of physical activity incorporated into daily life, (Association for the Study of Obesity (ASO) (2007)

The role of women has changed particularly in developed countries, traditionally, women were viewed as primary carers with responsibility for family health and well being

including the selection, purchase and cooking of the food. Today, many mothers are now working and therefore have less time available for food preparation.

> WHO (2000: 123) Working women have greater economic influence, especially over domestic purchases, and this combined with pressures on their time has contributed to the increasing consumption of energy dense convenience foods.

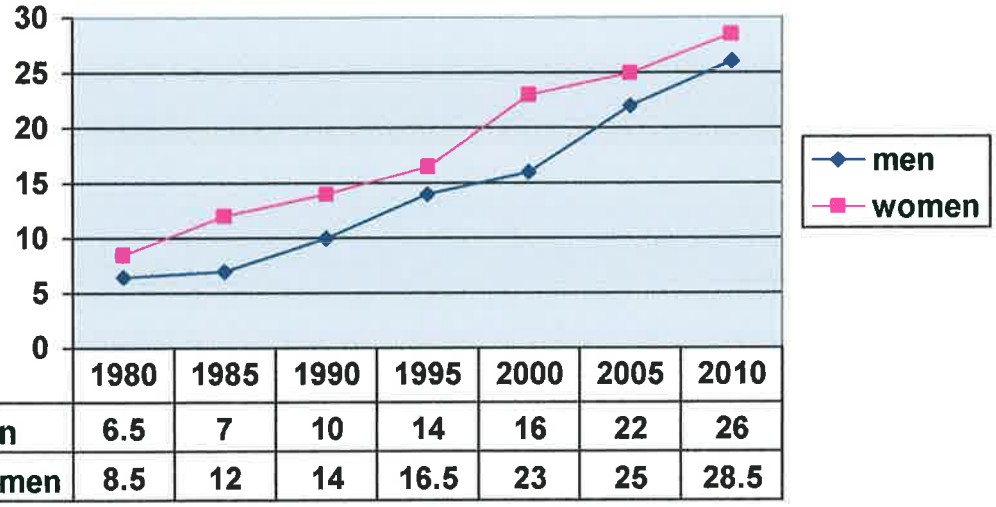
Evidence suggests that the development of obesity appears to vary between ethnic groups. Saxena *et al* (2004) examined ethnic group differences amongst children and young adults aged two through to twenty years of age in England. Their findings revealed that 'British Afro-Caribbean and Pakistani girls have an increased risk of being obese and Indian and Pakistani boys have an increased risk of being overweight than the general population,' Saxena *et al* (2004: 30). The study did not explore reasons for theses findings. However, it is possible that culture may have an impact on diet intake and exercise.

1.4 The Extent and Consequences of the Problem

WHO (2000: 6) defines obesity 'as a disease in which excess body fat has accumulated to an extent that health may be adversely affected.' It is acknowledged by the WHO that there is limited data available for risks of health problems associated with obesity. However, research conducted in industrialised countries suggests that there is an increased risk of developing Type 2 diabetes, gallbladder disease, dyslipidaemia, insulin resistance and sleep apnoea in individuals who are obese, WHO (2000: 39).

> Health Survey for England (2003: 143) 'The prevalence of generalised obesity has continued to increase in both sexes since 1994, from thirteen point eight per cent of men in 1994 to twenty two per cent in 2003; and among women from seventeen point three per cent to twenty three point four per cent.' The marked difference seen in 1994, when obesity prevalence was much higher among women than men, had largely disappeared by 2003 as a result of the more rapid increase among men.
>
> WHO (2000: 118) states that the increase in obesity rates have increased too rapidly to be explained by genetic changes in the population. This would confirm the role of the environment in contributing to obesity levels.

The following graph shows the increase in the prevalence of obesity (defined as Body Mass Index (BMI) above 30) over a thirty year period in England:



	1980	1985	1990	1995	2000	2005	2010
men	6.5	7	10	14	16	22	26
women	8.5	12	14	16.5	23	25	28.5

Source; NAO (2001) Analysis of data from the Health Survey for England

Obesity and its associated diseases present challenges for medical, health, and social care professionals in its treatment and prevention. The National Audit Office (NAO 2001: 16) estimated that in 1998, £480 million, or 1.5 per cent of NHS expenditure in that year was directed at treating illness related to obesity and if prevalence rates continue to rise at the present rate until 2010 the cost would be £3.6 billion. This subsequent drain on limited resources has led the government to become actively involved. Obesity has been identified as key issue in several national framework and strategy documents, for example, *Every Child Matters*, *Choosing Health*, *National Health Service Cancer Plan*, *and National Service Framework for Coronary Heart Disease.*

The NAO (2001: 11) states that 'Obesity is most commonly defined by clinicians in terms of the BMI.' An acceptable body BMI is in the region of 20 to 25. (2001:11) 'Anything above this is overweight, and a BMI over 30 is defined as obese.' The calculation is based on comparing a person's weight with their height and does not take into account sex or the proportion of body fat to muscle, therefore, this is not an accurate guide to obesity.

Choosing Health (DoH: 2004a: 140) recognised that children are at particular risk and need assistance to develop healthy eating and lifestyle choices. 'The research in *Choosing Health* suggests that seventeen per cent of all children were now obese.'

> 'The government have introduced a national target to halt the year-on year increase in obesity in under eleven year olds in the context of a broader strategy to tackle obesity in the population as a whole by 2010,' (DoH: 2004a: 140).

However, it has been widely reported in the media recently that the government has been criticised by opposition members of parliament for not doing enough to meet the target to halt the increase in obesity among under-11s by 2010.

Childhood obesity increases the risk of being obese as an adult. Sugimore et al cited Parizkova & Hills (2004: 15) found that the earlier the commencement of obesity the higher the BMI at seventeen years. Parizkova & Hills (2004: 15) 'However, it is recognised that some individuals may have been overweight as children and did not go on to be overweight as adults.'

Hall, (2007) writing in the *Telegraph* reports interviewing Edward Leigh, the chairman of the public health committee states that 'an entire generation of children are heading towards increased rates of serious health problems, and that parents have to be confronted with the knowledge that their child is over weight or obese. They overrule fears of stigmatisation and feel that parents should not be kept in the dark and be given healthy eating advice.

> Cameron *et al* (2006: 31) Psychological problems such as depression, low self esteem, stigma and discrimination have been recognised as impacting on children as well as adults who are obese, therefore, health professionals can be reluctant to label a child as 'obese', preferring to use the term 'overweight' instead.

Dalton (2004: 15) discusses how the medical community talk about childhood obesity and the obese child and prefer to use one of the following two categories when it comes to labelling, 'at risk of becoming overweight or overweight'. This may result in

underreporting of the true nature of the extent of the obesity problem in children.

The causes of obesity are multi factorial and therefore the interventions aimed at addressing obesity need to reflect this. There is a key role for policy makers in addressing many of the social factors contributing to the increasing obesity rates. The current public health message aimed at addressing obesity can also have a negative impact.

> Burns and Gavey (2004: 550) 'suggest the construction of obesity as a major health threat reinforces and perpetuates the attribution of health risks being generalised to anyone who is 'overweight' or experiencing weight gain.'

It could be argued that the media contributes to the obesity problem. Children are bombarded by advertisements that encourage unhealthy eating behaviours at the same time as promoting a certain slender body shape. The marketing of cheaper energy dense foods compared to healthier options can see some parents giving into their children demands.

The biomedical model of health tends to view obesity as a health threat and that to be overweight is to be unwell. Miller cited in Burns and Gavey (2004: 550) suggests 'health is only compromised by extreme obesity and there are health benefits with being moderately 'overweight' and that fitness, not fatness predicts disease and mortality risk.'

> Bennett and DiLorenzo cited in Baggott (2000: 181) states 'the food and drink police, nannies, busybodies and petty tyrants are waging a moral war against the pleasures of ordinary folk.' 'This in turn leads to social control rather than health improvements.'

Surveillance medicine sees unhealthy eating behaviour identified as a health risk. Therefore medicalising areas of peoples' lives rather than waiting until they are ill and then treating them. This approach also extends the health professional's role into working with the healthy population. Baggott (2000: 181) suggests that health professionals are part of a labelling process that leads to oppression of certain groups such as those on low income, some ethnic minority groups and women. Donzelot (1979) suggests that state interventions aim to mould families to fulfil certain functions. Where families fail to live up to this role the state then develops systematic forms of interventions to assist them.

> Billingham et al (1996: 391) 'Academics, feminists, commentators and parents criticise health visiting for having its intrusion into the private lives of families.' This presents a major challenge to health visitors who need to be responsive and adaptive to the needs of their clients. It is therefore important to listen to the needs and views of service users.

1.5 Health Visitors

Public health in the nineteenth century assisted with improving environmental factors contributing to poor health such as housing, sanitation and poor food. However, there was still concern about high infant mortality rates and the physical state of working class men who were needed for the Boer War.

> Billingham *et al* (1996:387) 'Environmental causes of ill health were acknowledged, but neo-hygienist approaches identified working class mothers as the cause of ill-health and promoted education as the solution.'

Health workers became responsible for the implementation of this education.

> Ashton et al cited in Costello and Haggart (2003: 102) 'Health education as part of a public health approach can be traced back to the sanitary ladies of the 1920s, the forerunners of today's health visitors or public health nurses.'

The health visitor's role has expanded since then and they currently offer a service to all families. They have an understanding of the social, psychological, environmental and biological factors that can impact on health and well being. They are accessible and acceptable because there is no stigma attached to health visitors and they can act as mediators and intervene at a much earlier stage. Health visitors see and assess families with children in their own homes. They are ideally placed to work with pre school children and their families in addressing childhood obesity. Community Practitioners' and Health Visitors' Association's (Amicus/CPHVA) 'Health visitors have access to mothers and families from shortly after the birth of children.' They are in a prime position to give accurate standardised information to mother about the importance of healthy lifestyle for all family members.'

Whilst this may be true for some families, in others it may well be the father who controls the family budget and the grandparents who act as childminders. It could be argued that

health visitors should be working with the whole family including fathers, grandparents and the community. This would ensure that a 'holistic' approach was used and may go some way to changing and shaping attitudes toward food for whole communities and culture.

Parents can find feeding a pre school child very challenging. More (2005: 105) suggests infants who are demand feeding milk feeds are usually amenable to eating most foods offered to them under one year of age. However, dealing with fussy and picky eating can be extremely stressful and anxiety provoking for parents.

Bundred *et al* (2001: 4) found in their retrospective cross sectional study that the increase in the incidence of obesity occurred before the age of four years and interventions should be targeted at this age group if they are to have an impact. There is a lack of research in relation to childhood obesity and in particular focusing on interventions in early life. The main interventions are aimed at school age children. Therefore, it is necessary to target action early in life and hopefully establish healthy eating and lifestyle patterns for the future.

The parents, extended family and network/support are key agents in ensuring the pre school child receives and maintains a healthy diet. In order to ensure future health promotion/education interventions are effective, it is appropriate to identify the barriers for parents to healthy eating. This in turn would also address the current concerns around the epidemic in adult and childhood obesity.

CHAPTER 2 METHODOLOGY

2.1 Chapter Preface

This chapter describes how the decision that an in-depth literature review of published research was the most appropriate method for answering the research question. An explanation how the literature search was approached and criteria used to decide what was included or excluded. The problems experienced are discussed and how the research studies were critiqued. Finally how the initial literature selection was refined and themes were identified from which the final choice of documents was made for inclusion or exclusion.

2.2 An explanation for the choice of research methods utilised to answer the research question

> Greenhalgh (2006: 114) suggests that 'a systematic review is an overview of primary studies which contain a statement of objectives, materials and methods; has been conducted according to explicit, transparent and reproducible methods.'

A systematic review is not appropriate to answer this question because this would limit the studies by predefined methodology. For example, the need for the studies selected to specifically relate to the research question. This research question is not precise enough to be addressed using this methodology. This literature review aims to examine the current strategies relating to healthy eating in respect of pre school children and their parents. There are limited sources of data specifically targeted at this group and therefore, some useful studies would be rejected as they do not fulfil the eligibility criteria.

Bowling (2002: 136) meta-analysis is a technique using different statistical methods to combine pooled data sets (results) from different studies and analysing them in order to reach a single observation for the aggregated data. A benefit of this method is that using larger sample size increases the power to detect true effects, overcoming site-specific effects. Studies are selected cautiously and critically for entry and each item is looked at as part of a larger study. Data is pooled critically and statistical analysis is designed to

recognise differing features between data sets.

Meta analysis can be used to ascertain the extent of the obesity problem in detail by various factors, such as social class, location, ethnic group etc. It could also be used to show the statistical results of various approaches to tackling obesity. However, as this dissertation is aimed at strategies to address obesity, this method is less appropriate because it cannot fully explain the psychological, social and cultural factors that influence behaviour.

Initially the possibility of doing a case study was explored, which would involve interviews with professionals and colleagues. However, ethical approval would be required and this was not possible given the limited time scale for completion of this dissertation. A number of other factors also affected my decision. For example, I am conducting the research alone and feel that I lack sufficient experience of conducting academic research interviews.

An in depth literature review is the most effective method to explore this research question as data from a much wider source can be reviewed in more detail than if primary research was to be carried out. Polit and Hungler (1999: 80) 'When a study is linked with other research, the findings can be better understood within the existing base of knowledge.' It will provide a solid background to this area of study and identify areas of research that need to be addressed in the future.

> Hart (2000: 8) 'a good literature search demonstrates the ability to search, identify and select materials relevant to the topic and which need to be reviewed at a level appropriate to the project.'

The existing literature would suggest there is a gap in knowledge and understanding of effective interventions aimed at addressing obesity in pre school children.

2.3 Development of the literature search strategy

An initial search of the literature available was conducted in order to establish how much material there was on the subject of obesity and in particular with pre school children and their parents/families. Another aim was to identify possible gaps in existing research. This enabled me to become familiar with the subject whilst further refining the research question and to identify work in progress, such as on going research projects relevant to this subject. It was an opportunity to look at the research methods used and the benefits and disadvantages that were identified.

It was decided to focus on parents with pre school children as this was an area that had not been fully addressed. In the preliminary search, various professionals' viewpoints were considered in relation to obesity. A search across different disciplines provides different perspectives and a broader understanding of the subject. For example, the medical profession views obesity as a medical condition rather than a disease of lifestyle.

A good search involves detailed planning and maintaining accurate records. Potentially useful items were selected and read to extract relevant information such as, opposing arguments, data, theories, concepts and definitions. The aim was to acquire up to date information about this subject from as broad a range of literature as possible, including books, internet sites, reports, pamphlets and public organisations.

Textbooks and reference books were also used as they highlight the ideas and developments from the various disciplines. Books are a proven source of information and data on this subject and can also give both a historical and social background to this issue. They can provide an overview of obesity in general. However, the author of the book will have their own perspective and point to make, which one has to be aware of when evaluating the information therein. Furthermore, they become quickly out of date as circumstances change and new developments arise. With this in mind, books of five years old or less were only used wherever possible. Parahoo (2006: 123) suggests that reliance on books as a main source of literature could lead to recent research being missed. The internet has proven to be a very good source of diverse viewpoints on the issue of obesity. For example, the 'Association for the Study of Obesity' provided a list

of specific research projects. It has up to date media stories and published documents together with an extensive reference list of previous reports, articles etc. However, it is necessary to acknowledge that the sources for such information may not be as reliable but do provide an overview of debates and issues.

The initial reading enabled me to develop an understanding of the subject and to identify parameters for the search in order to answer the research question. The assistance of the librarian was sought to update my skills in literature searching techniques. Timmins and McCabe (2005: 44) suggests 'establishing a good working relationship with the librarians is an integral part of any successful literature search.' This enabled me to acquire knowledge of the tools by which information is organised and made retrievable, such as use of key words and most appropriate databases to search. This made the search more productive and thorough whereas a random search could miss valuable articles.

The following key words were used to conduct the initial literature search-

Obesity

Children

Community

The above terms were developed for the search to make it more effective. For example, initially the term 'child' was used. I then discovered that many articles were classified under 'children'. The bibliographies of these articles provided me with an extensive list of references for further literature from a range of sources that cover the fields of health, medicine and academic research. I was therefore able to locate a number of key articles, policy documents and government publications from which I identified relevant references to find further articles. Hek and Moule (2006: 35) suggest 'snowballing' means finding key articles from literature reviews and chasing up those articles and so on until saturation.' The literature search was in this way constantly refined and developed throughout the duration of this piece of work.

Three obesity strategy documents were randomly selected to represent different geographical locations; Leeds, Southampton and the area where I work, South Gloucestershire. These strategy documents are evidence based using the latest research findings and data and therefore represent contemporary views on this subject.

Hart (2001: 107) Official and government publications, statistics and archives can be key sources of data, information and material for analysis. The reference list and evidence base from each document were considered to ascertain what guided these policies and the similarities and differences between them. The aim was to evaluate the effectiveness of these current policies and suggest recommendations for modification or development of new initiatives. Furthermore, do they contain strategies targeted at parents with pre school children?

A framework for the search was therefore developed based on inclusion and exclusion criteria. This would ensure a systematic approach which would avoid duplication and provide the most relevant data. The search for literature was part of an ongoing process throughout the duration of this review.

2.4 Inclusion Criteria.

The criteria used for inclusion was arrived at by referring back to the original research question and sub questions. Polit and Hungler (1999: 81) Research findings represent the results of research investigations, one of the most important types of information for a research review. Therefore it was decided to focus the literature search on primary research studies.

The aim was to search for studies from a wide range of geographical locations, rural to inner city and those that reflects social class and ethnicity. The search was restricted to peer reviewed studies carried out in the past five years in order to use the most up to date validated data available. Parahoo (2006: 124) Peer review helps to maintain standards in publishing and gives credibility and value to the published material as unsuitable articles are rejected or sent back for revision. This will enable conclusions to be drawn that could

influence current and future interventions in public health practice. This review aims to critically analyse current research conducted in the United Kingdom, (UK). Therefore, the search was initially limited to studies written in English in British journals, but could be extended to other western countries if insufficient data was collected. It quickly became apparent that the majority of the research studies in relation to preschool children had been carried out in the United States of America, (USA) Canada and Australia. Using data from other countries can help to improve or develop new initiatives aimed at understanding and treating obesity that are not in use in the UK. Research methodology used could help with developing research in this country. Hart (2001: 28) suggests one of the most important outcomes of the search and review is the identification of methodological traditions which in turn can assist with data-collection techniques for ones own work. Therefore, it was appropriate to include research carried out in these countries.

2.5 Exclusion Criteria

This was an under researched area and it was therefore necessary to include the studies available. Studies were therefore included despite there being declared or undeclared bias and limitations. It was necessary to acknowledge the shortcomings of the studies in the discussion and make recommendations for further research.

Studies not written in the English language were excluded.

Secondary research titles were excluded because they do not provide sufficient detail about research studies and may lack objectivity. It is therefore important to use primary sources where possible to develop one's own interpretation of the findings. Polit and Hungler (1999: 83) Suggest that whilst secondary sources are useful in providing bibliographic information on relevant primary sources, they should not be considered substitutes for primary sources.

The aims of this literature review are;

To explore if current interventions aimed at addressing pre school childhood obesity are sensitive to the needs of clients.
To identify future needs for staff training.
To examine what aspects of health inequality contribute childhood obesity
To identify areas for further research.

Some papers were found not to relate to pre school children were therefore excluded as were others that did not match up to the themes identified. Papers that did not provide information relevant to the research subject aims were excluded.

2.6 Rigour of Research Findings

In order to ensure that this research was rigorous, I referred back to the original research question and sub questions. I needed to ensure that I had accessed all the available literature relevant to this study. This included government publications, journals, books, internet sites and local authority strategy documents.

It quickly became apparent that obesity in relation to families with pre school children is an under researched area. There was insufficient quantity of literature to be selective about the quality of the research. For example, ideally, I would have preferred studies from the UK with a large sample size and long term follow up of the research. Therefore I chose all material relevant to the research question from this small pool of data.

2.7 How I conducted the literature search.

A search of the databases was conducted by login into South West Information for Clinical Effectiveness (SWICE) and then dialog star. I logged in via Athens using my own Athens username and password. (see appendix I)

There is a vast amount of databases. I therefore initially focused on those most closely related to medical and nursing fields of research. For example, British Nursing Index

(BNI) and Cumulative Index to Nursing and Allied Health Literature print index (CINAHL). Following a discussion with the librarian, I concluded that the most fruitful data that was relevant to community nursing in the UK would be obtained by a search using the BNI. It became apparent that research from outside the UK needed to be accessed. Therefore, the search was extended to the CINAHL database.

The following key words were entered to search for relevant literature:

healthy eating	adolescent	UK
children-nutrition	infant feeding	community
family	obesity	health visitor
research	pregnancy or fetus or	community-health-nursing
pre school children	infant-newborn or infant	
	or child-preschool	

The search was limited to the previous five years to ensure up to date relevant literature. Timmins and McCabe (2005: 45) points out that a possible disadvantage of limiting the search in this way is that older seminal studies may be omitted. This was something that needed to be considered.

The terms 'OR', 'AND' and 'NOT' were used to combine terms to extend and narrow the search.

> Hart (2000: 153) 'Boolean operators give you the power to narrow your search by enabling you to specify what you are looking for and thereby exclude many irrelevant items.'

A detailed account of the search strategies can be found in the results section and appendix. This produced a satisfactory number of research studies for inclusion in the review. Abstracts were read to assess relevance to address research question. Following a successful search I selected literature for inclusion into the review. A critical review of the literature follows in the next chapter.

2.8 Identification of themes from included studies

The initial reading of background material together with my professional experience provided an insight into some of the potential barriers to healthy eating. This provided the themes that were looked for at the outset, for example; pre school children, community, health visitors, inequality and family.

The following themes were identified from the included studies. This was done by referring back to the main subject and aims of this literature review.

Individual

Lack of knowledge and/or skills

Cooking and budgeting

Lack of support/time

Poverty

Cultural and/or ethnic differences

Environment

Lack of access to healthy foods

Limited or poor transport

This chapter explains why a literature review is an appropriate method to address the research question. There is an explanation for development of the search strategy and the framework that was developed, together with inclusion and exclusion criteria. The rationale for which databases are searched is also given. The choice of literature to be reviewed is justified. Finally the themes that emerge are identified. The next chapter explains in detail the results of the search and results from the literature reviewed.

CHAPTER 3 RESULTS

3.1 Chapter Preface

This chapter describes the results of the search strategy in detail. The strengths and weaknesses of each of the twelve studies selected plus three obesity strategies were examined. The studies were grouped under the three main themes that emerged:

1. Lack of knowledge/skills
2. Lack of support
3. Lack of access to affordable healthy food.

A search of the databases was conducted by login into South West Information for Clinical Effectiveness (SWICE) and then dialog star using my own Athens username and password.

Initially, the term healthy eating was selected as a broad term which would capture a wide selection of titles. However, only one hundred and forty four titles were produced using this search, so thesaurus mapping was used to extend the search. The term children-nutrition was identified and entered resulting in over five hundred titles (see appendix II for results of search strategy). There were too many titles to research fully, therefore the search needed to be refined further. The term family was combined with the previous result, producing seventy four titles. Restricting the search to the past five years resulted in fifty six titles.

The term research was combined with the previous search to identify research only papers. In order to answer my research question, the search was further narrowed by using the following terms; pre school children and NOT adolescent which produced a more manageable result of seventeen titles. The term infant feeding and obesity were then added to ensure that as many relevant documents as possible were identified, which increased the number of titles to twenty eight.

A further search was conducted using the CINAHL database which includes more overseas titles. The search of this database was conducted in the same way as the previous search of the BNI. The only difference being, the addition of the terms; pregnancy, fetus and infant-newborn as descriptors. This search produced one hundred and thirty seven titles.

My preference was to research British titles and I therefore conducted a search using the words UK and community which produced far too many results to be considered. The term health visitor and community health nursing were used to narrow the search, but this search only produced four titles.

The twenty eight titles search from the BNI database was combined with the sixty nine titles from the CINAHL. I then dropped duplicates from this result which meant that ninety six titles were unique. Finally, this database search was entered with the term and research, with the language selected as English. This produced fifty four titles.

The abstracts of the final fifty four titles were printed and scan read for relevance to the original research question. If they were found to be appropriate for inclusion into the review the full text article were either downloaded via the internet or requested from the library.

Studies carried out in the UK were given priority for inclusion with overseas literature being selected where appropriate. There are likely to be similar barriers to a healthy lifestyle and the interventions employed to address this could be comparable to the UK. However, caution is needed when considering relevance to all aspects of British healthcare. However, using research conducted in other countries did present difficulties. For example, the health visitor role does not exist in others countries under this name. Thesaurus mapping was therefore used which identified the term public health nurse. The twelve papers were scan read to see if they were appropriate for inclusion into the review and relevant to study topic. If this was not the case they were excluded at this stage.

The final selections contained a mixture of qualitative and quantitative research studies and were in the main conducted in the United States of America. The literature gathered

for my review was critically appraised for credibility and reliability. The Critical Appraisal Skills Programme- making sense of evidence (CASP 2002) and Hancock (2001) was used to review the literature to identify strengths and weaknesses of each study.

3.2 Results from the research studies

3.2.1 Theme 1; Lack of knowledge/skills

A total of six studies are presented where a lack of knowledge/skills was identified as a major challenge to healthy eating. See table 1 for further information. The studies consider the need for health education and the effectiveness of such interventions.

TABLE 1 THEME 1; STUDIES IDENTIFYING LACK OF KNOWLEDGE/SKILLS

Author, Title and Country	Research Design	Results
L, Young *et al* (2004) Using Social Marketing Principles to Guide the Development of a Nutrition Education Initiative for Preschool-Aged Children United States of America	Qualitative study. Multifaceted evaluation plan including, focus groups, interviews (one to one) and questionnaire.	Children showed an increase in overall acceptance of new foods after repeated exposure to a specific new food.
M, Horodynski *et al* (2004) Nutrition Education Aimed at Toddlers. A Pilot Program For Rural, Low- Income Families. United States of America	A quasi-experimental, longitudinal design. Individual interview initially and questionnaire administered. Procedure repeated six months later.	Knowledge alone is not sufficient to encourage parents to follow feeding guidelines.
M, Flynn *et al* (2005) Promotion of Healthy Weights at Preschool Public Health Vaccination Clinics in Calgary: An Obesity Surveillance Program Canada	Quantitative Parents of the children and public health nurses completed evaluation questionnaires at clinic.	Effective way to obtain baseline information and for assessing effectiveness of interventions.
K, Hoare *et al* (2002) Disseminating weaning messages: an intervention trial. England.	Quantative non-randomised intervention study Knowledge assessed by questionnaire at 7 to 9 month development review.	Several months after intervention group 1 was found to report greater knowledge of correct infant feeding guidelines than those in the control group 2.
S, Ilett *et al* (2004) Improving the diet of toddlers of Pakistani origin: a study of intensive dietary health education. England.	Quantative Prospective intervention study. Questionnaires were completed pre and post teaching programme.	Nutritional knowledge gained was significant and lead to changes in their Childs diet. 24 mothers, compared with 14 before programme were able to give a relevant definition of the term 'anaemia ($p=0.005$).
K, Everett *et al* (2006) Health Risk Behaviour of Low-Income Expectant Fathers United States of America	Quantative Cross-sectional prevalence study conducted by a telephone survey and questionnaires.	This study found expectant fathers engaged in high rates of health risk behaviours.

Everett *et al* (2006)

This study reviewed the need to target fathers with health education and assessed one hundred and thirty eight expectant fathers' health risk behaviours and attitudes about pregnancy related health issues. Data concerning several risk factors was collected for fourteen months, however, only the results relating to diet and obesity are presented.

Their average age was twenty six years old and they were interviewed at twenty one weeks' gestation of pregnancy. Most of the men were married (sixty one point six per cent), lived in a rural area (eighty seven per cent), and were employed (eighty six point two per cent).

Ninety five per cent of men were found to be eating fewer than the recommended five servings of fruit and vegetables. Forty two per cent had weight related health risk. One group of men were found to be obese with low activity.

Ilett *et al* (2004)

This study examined whether improved maternal knowledge could lead to changes in toddler's diet. The children's diet was assessed using 24 hour recall and weekly food frequency from which a 'food frequency' score was derived. Data was collected using detailed questionnaires pre and post teaching sessions which assessed maternal knowledge using targeted questions. This approach was appropriate to evaluate the effectiveness of this intervention.

The aim was to assess effectiveness of an individual dietary health education programme delivered at home by a health worker and an experienced interpreter who also understood the respondents' culture. Bowling (2002: 266) recognised that using an interpreter may lead to interview and response bias, the alternative could result in key groups not being represented included in sample. The sample was representative of a hard to reach group who would benefit from a culturally sensitive health education programme delivered in their first language. The teaching programme focused on healthy weaning and emphasis

on iron rich diet. The nutritional knowledge gained was significant and lead to changes in their child's diet. Thirty nine mothers took part and twenty six completed it.

Although this study did not evaluate nutrition education in relation to childhood obesity, the findings are transferable to health education aimed addressing childhood obesity.

Hoare *et al* (2002)

This study examined whether participant-centred health education improves parents' knowledge and actions concerning infant feeding. A randomised controlled approach would be unsuitable because mothers and young children meet at various locations, it would be impossible to distinguish what mothers knew as a result of the intervention or from other parents.

The sample were clearly identified and consisted of two groups, one with intervention and one without. Sixty one mothers enrolled into the study and forty four completed the questionnaire (Group1-intervention). Forty eight mothers including a single parent family and one father enrolled into the study of which, thirty nine completed the questionnaire (Group 2-control).

An initial quiz was carried out anonymously to establish baseline knowledge. The questionnaire was given out by the family health visitor at the nine month review to be returned in the envelope provided.

This study showed that several months later, intervention group 1 had greater knowledge of correct infant feeding guidelines than those in the control area and provided social support for the participants. This was statistically significant with the results unlikely to have occurred by chance and can be attributed to the interventions.

Horodynski *et al* (2004)

This study assessed the effectiveness of health education aimed at toddlers. There was an intervention and non intervention group with pre and post tests.

A convenience sample of thirty eight low income families with toddlers was recruited, half of which attended nutrition classes. Inclusion criteria were; toddlers aged under thirty six months, attendance at program and income below one hundred per cent poverty level. Exclusion criteria were; families with children younger than twelve months, toddlers with diagnosed eating disorders and non English speaking families.

A questionnaire and twenty four hour dietary recall was used to assess the caregiver's knowledge, attitudes and mealtime practices/behaviours. There were no statistically significant differences between the two groups six months later.

Young *et al* (2004)

This study evaluated nutrition education based on the social marketing approach targeting pre school children. Young *et al* (2004:250)) 'Social marketers use a 'bottom-up' approach to develop health education programs that focus on behaviour change.
The sample contained respondents from Hispanic, White, Asian and Black backgrounds. Seventy six low income parents completed a food frequency questionnaire on behalf of their child. Forty two three to five year olds took part in pre testing interviews. Focus groups and questionnaires were used to collect data from teachers and respondents.
This was before a twelve week pilot program started which offered advice, child development and problem solving relating to nutrition. For example, encouraging experimenting with new foods. After repeated exposure, the children showed an increase in acceptance of new foods. It was recognised that involving the audience in the design of the programme leads to greater success. For example; the choice of new food, duration and location.

The study recognised the need for a follow up assessment of the long term effectiveness of any initial behaviour changes

Flynn *et al* (2005)

This study evaluated the feasibility of a surveillance program of excess weight and obesity in pre school children.

A pilot was tested in four clinics where three hundred and eighty three children had pre school vaccinations. One hundred and twenty seven completed questionnaires. Forty five public health nurses out of seventy completed the questionnaires. The subsequent full programme enrolled seven thousand and forty eight children, of both genders. Average age was four years and all attended clinic for their pre school vaccinations.

Concern was expressed that weight monitoring could lead to eating disorders and only those who attended for vaccinations were assessed. There was no long term follow up as to the long term success of this intervention.

This is an effective way to obtain baseline information and ninety eight per cent of parents were happy with the information they received. This surveillance system was also acceptable to staff.

3.2.2 Theme 2; Lack of support

A total of five studies are presented where a lack of support was identified as a major challenge to healthy eating. See table 2.

TABLE 2 THEME 2; STUDIES IDENTIFYING LACK OF SUPPORT

Author, Title and Country	Research Design	Results
E. Fowles *et al* (2004) Identifying Healthy Eating Strategies in Low-Income Pregnant Women: Applying a Positive Deviance Model. United States of America	Group interviews and Questionnaires. Twenty four hour recall. Qualitative Study.	No significant differences were noted between women with nutritionally adequate or inadequate diets on psychological assessments. Those with adequate diets were found to have partners, compared to the other women only half of whom have partners.
M, Collins *et al* (2003) Coping with the usual family diet. Northern Ireland, UK and the Republic of Ireland.	Quantitative Postal questionnaires	Parents were looking for help, advice and guidance from health professionals. Many felt criticised and blamed for their childrens' eating problems. Importance of multi-disciplinary teamwork.
P, Thornton *et al* (2006) Weight, Diet and Physical Activity-Related Beliefs and Practices Among Pregnant and Postpartum Latino Women: The Role of Social Support. United States of America	Qualitative Study. In depth semi structured interviews and focus groups. Interviewers were Latino women and conducted in Spanish. Then translated in English.	Three types of support emerged. Informational, emotional and instrumental. The women were primarily influenced by their husband on issues concerning weight.
S, Lee *et al* (2005) Screening for Infants' & Toddlers' Dietary Quality Through Maternal Diet. United States of America	Quantitative longitudinal study. Interviews obtaining 24 hour food recall from mother and infant at six months and at fourteen months	Mothers with poor diets tended to have infants with poor diets. Greater compliance with dietary guidelines was associated with lower neglect of self care, weight related distress, stress, depressive symptoms and perceived barriers to weight loss.
G, Goldy *et al* (2005) Compliance with Dietary Guidelines and Relationship to Psychosocial Factors in Low-Income Women in Late Postpartum. United States of America	Quantitative using questionnaires	Study found the degree of stress from work or school problems, financial issues and bereavement were associated with limited compliance with diet guidelines.

Goldy *et al* (2005: 916)

This study aims to evaluate compliance with dietary advice following childbirth and how psychological well being impacts on this.

The sample consisted of one hundred and forty six adult women equally represented from a white, African American and Hispanic background. Sixty two per cent were living with their partners and sixty four point four per cent had two children. Other inclusion criteria included; having telephone access, read and write English. Postal questionnaires were used to collect the data. A limitation of the study was the wording of the questions and how they may have been interpreted by the respondent. Furthermore, it is possible that compliance with dietary guidelines was poor before, during and after pregnancy. It is unclear what proportion of the entire sample returned the questionnaire.

Collins *et al* (2003)

This study explored how families with children who have learning difficulties cope with the usual family diet. Postal questionnaires on eating behaviour, frequency of consumption of selected foods and food choices were sent out to families from three support organisations. Due to the wide geographically location of the families this was an appropriate choice to collect data. Bowling (2002: 260) supports that postal questionnaires are a common method of covering a large geographically spread population relatively quickly and more economically than interview.

In total four hundred and five children with a syndrome together with two hundred and eighty of these children's siblings questionnaires were analysed for this report. The age range was greater; however, the results for children aged two to under five years are presented. Parents who have feeding problems maybe more motivated to fill in questionnaires in order to obtain help for their child.

The study showed some of the unique challenges these families experience and the lack of support from the many agencies involved with them.

Fowles *et al* (2005)

This study used positive deviance methodology to identify strategies that enable some low income pregnant women to eat healthy meals while others did not.

This convenience sample consisted of eighteen women who were pregnant were interviewed in groups about dietary intake, mood, stress, self-esteem, and social support.

No significant differences were noted between women with nutritionally adequate or in adequate diets on psychological assessments. All of those with adequate diets had partners, whereas only half of those with poor diets had partners; many of which dine out with friends in fast food restaurants to meet their social needs.

Thornton *et al* (2006)

This study investigated how social support influenced weight, diet and physical exercise beliefs among pregnant and postpartum urban Mexican women. The sample consisted of five pregnant and five postpartum women and ten people who influenced them. This study used individual interviews as well as focus groups to collect data.

The role of the husband in providing information and emotional support was recognised. Lack of female support in the form of a mother or other relatives was also found to be a major theme in this study.

The findings of this study can not be generalised to women from other ethnic minority groups, socioeconomic groups or locations. However, the findings can be used to develop interventions and future research at a similar population.

Lee *et al* (2005)

This study investigated the relationship between a mothers' diet and that of her infants or toddlers.

The sample size was one hundred and thirteen mothers with infants/toddlers and a low level of education. It is acknowledged that some could not be contacted at one or both interviews and some infants were fed by caregivers other than mothers.

Interviews obtaining twenty four hour food recall from mother and infant were conducted at six and at fourteen months. Each interview included questions on family health habits and observations of mother child interactions. The risk of bias was overcome by using experienced interviewers.

The findings showed that these mothers did not have breakfast and had little fruit, vegetables and dairy products. Poor diet intake for mothers was found to be a useful indicator of the quality of the diet for their offspring.

Omar *et al* (2004)

This nutrition education project examined rural, low income caregivers with toddlers; knowledge, attitudes, mealtime practices and dietary intake before and after the program.

This was a convenience sample of thirty eight families who were mainly Caucasian. Nineteen attended classes and nineteen did not. They were all mothers apart from one grandmother and one father. Individual interviews together with a questionnaire were administered initially and six months later.

No significant differences were found between the two groups six months after the lessons.

3.2.3 Theme 3. Lack of access to affordable healthy food

The findings of one study are presented. See table 3.

TABLE 3 THEME 3; STUDIES IDENTIFYING LACK OF ACCESS TO AFFORDABLE HEALTHY FOOD

Author, Title and Country	Research design	Results
Margaret A. Boughton *et al* (2006) Predictors and Outcomes of Household Food Insecurity Among Inner City Families with Preschool Children in Vancouver.	Quantitative cross sectional study	This study found anxiety about food supply, quality or quantity to be five times higher than compared population of Vancouver.

Boughton *et al* (2006)

The study aimed to describe the link between food insecurity and how this affected children's nutritional status. Boughton *et al* (2006: 214) Food insecurity for families ranges from anxiety about amount of food available to poor quality and the amount of food. Environmental factors that impact on such insecurity and the role of public health and social policy were also considered.

> Boughton et al (2006: 215) the 'results suggest cooking skills and appliances play a role in providing choice and control over food, as food insecure parents juggle taste, nutrition, cost and convenience in their food selections.'

This was a convenience sample of one hundred and forty two households with children aged between two and five. Data was collected by questionnaire but, there is no information whether this was done face to face, by telephone or by post.

In this study low income was the main reason for food insecurity. However, the respondents' environment also contributed. For example, convenience stores offering cheap foods of lower nutritional quality are often the only option for mothers with young children.

3.3 Obesity Strategies

The strengths and weaknesses of three obesity strategies are presented as follows. The common themes are presented in the discussion chapter.

3.3.1 An Obesity Strategy for Southampton; 2003-2008 (OSS)

The policy covers all ages and concentrates on addressing health inequalities. There is no clarification about which health inequalities are being targeted.

The action plan targets interventions at all families in the community, starting with diet and lifestyle advice from the ante to post natal stage. However, the policy is not explicit about being aimed at fathers, ethnic groups or the disabled. The strategy was developed following the results of a consensus-gathering event that was attended by local experts and agencies in 2003. The names of organisations involved in strategy development are included as are the names of the steering group members. The main professional bodies were represented and this could assist with successful implementation of the recommendations. However, it is unclear whether service users or practicing professionals' views were considered and there are no contact numbers or details. This may affect networking and sharing of practices across disciplines and geographical areas.

A summary to the problem of obesity at a local and national level is provided. It is acknowledged that there are no reliable local figures for those at risk of obesity in primary care. OSS (2003: 7) Therefore, estimates were calculated by extrapolating the national figures to the population of Southampton. This suggests that there are approximately forty one thousand three hundred adults and two hundred and forty children at school entry (4-6 years) in Southampton who are obese, OSS (2003: 8). There are no figures available for the prevalence of obesity in the pre school population. While it is acknowledged that data needs to be collected more efficiently, this particular age group does not appear to be targeted specifically.

Effective interventions and recommendations are based on evidence from the Health Development Agency 2003. The main research findings are that parents working with health professionals hold the key to addressing childhood obesity. However, crucially

there does not appear to be any engagement with the parents of these school children and this could affect the maintenance of healthy eating and lifestyle behaviour change. OSS (2003: 22) the action plan recognises the need to encourage and support mothers to breastfeed. However, there is a lack of clear initiatives aimed at those working with families who have pre school children specifically. There is an action plan that outlines the framework of action which includes, collecting of data and regular recording of BMI by general practitioners and involving all agencies. There are timescales for duration of initiatives and the level of priority given to each recommendation. Progress towards defined goals is evaluated during this process. New data can also be included within this review process concurrently. Therefore, interventions can be refined and developed to be more effective.

There is a consultation period of three months, following which the strategy was adopted by partner agencies across city. This provides an opportunity for professionals to feedback their views and these could then be considered before finalising the strategy. Again by involving those that will deliver the strategy before it is launched, increases the successful implementation of the recommendations. However, there is no indication of how the strategy changed as a result of the consultation period.

There is a recognised need to develop services for those needing hospital out patient and/or in patient treatment. This is included in the action plan

3.3.2 Overweight and Obesity Strategy for South Gloucestershire; (OSG) 2006 – 2008

The strategy concentrates attention on the collection of information about levels of obesity, prevention and management of excess weight and obesity in children and adults. Government set targets for local authorities are identified. There is an outline of how the strategy links up with other strategies in South Gloucestershire and summaries are given. For example, The Food and Health Strategy 2005. The National statistics were used along with a local comparison in order to target interventions appropriate to local need. OSG (2006) The approximate proportion of 4-5 year olds in South Gloucestershire who were overweight in 2004/5 was fifteen percent and a further nine percent were obese. This can

then be utilised to guide the work of the local authorities and PCT. A range of professionals are represented on the working party, including PCT and council staff. However, no schools or social service departments were represented. This will limit the information gathered and implementation of new initiatives. One possible reason for their non inclusion is that they are employed by different government agencies.

The working group does not include representatives from all professional groups. For example, general practitioners who are the primary contact for many people seeking help with weight. School nurses carry out height and weight measurements and explore opportunities to support healthy eating. However, there are no school nurse representatives in the working group. This omission significantly limits the availability of practical expertise from professionals working in the area at the policy drafting stage. Additionally, excluding this group of nurses may effect their commitment to interventions that they have not been fully consulted on. There is also an absence of voluntary groups who have a valuable contribution to make to public health initiatives.

There is no evidence that the guidelines having been piloted among service users or that their views were sought. Again this will affect how client sensitive the interventions are and their success.

Implementation of strategy is assigned to the working group who monitor and report information every six months. A review date is set four years from publication and a procedure for the review has been set taking into account the NICE guidelines being published. There is also an acknowledgment of the need to review if PCT reconfiguration takes place in 2006

The design of the document is not eye catching or colourful and it may take a while to read through and understand the implications for practitioners. The document despite initially being visually unappealing does have good features which assist the reader. For example, there is an executive summary for those who do not need to read the entire detail. Also, there is an easy to read table outlining work at all levels to promote healthy eating and exercise. Furthermore, there is an action plan for areas of work 2006-2007 with contact name of lead member of staff which will assist with networking.

The recommendations are based on research taken from Health Department Agency reviews. 2003-2004 and are therefore, evidence based. Local gaps and priorities are identified with areas for further work and development building on the existing initiatives also being highlighted.

The focus of this strategy is a prevention orientated community approach which targets the resources at people before they get to hospital. This can produce a better outcome for clients without the need for more invasive procedures in a hospital setting and prevention is more cost effective than treatment.

Health inequalities are recognised nationally however, there are presently no local statistics of such disparities to offer a comparison. Therefore, services do not always appear to be targeted appropriately and the outcomes of interventions are not possible to evaluate thoroughly at the local level. The policy recognises that obesity rates are higher among Asian groups. However, despite this acknowledgement there are no specific interventions aimed at working with ethnic minority groups.

It is a huge step for someone to make a decision to seek help with their own or their child's weight problem or eating. It is therefore essential that once help is sought, that correct advice and support is provided quickly. Motivation to address unhealthy lifestyle or eating can dramatically be reduced if an inadequate response is received. All professionals in health, education and the voluntary sector need to be made aware of the research findings in relation to preschool children and their role in preventing obesity. An awareness of the evidence will assist staff to recognise the contribution they can make towards helping families and individuals to take the first step towards living a healthier lifestyle. Health visitors are ideally placed to be key agents in helping parents of preschool children on this path. However, in my experience as a health visitor working in this trust, joined up working needs further development between agencies and different professionals. For example, in the surgery where I work, there is no coordinated obesity strategy between the general practitioners, practice nurses and health visitors. This leads to an inconsistent message being delivered to the practice population.

Currently there is a small section in the strategy on obesity interventions aimed at school age children and very little for preschool children. The only aspect of pre school child obesity referred to is a focus on improving breastfeeding rates particularly in disadvantaged groups as research shows that breastfeeding contributes to reducing the risk of obesity in later life.

3.3.3 Can't wait to be healthy' Leeds Childhood Obesity Prevention and Weight Management Strategy; 2006-2016 (LCO)

This strategy has a colourful and eye catching picture of children on the front cover, which could attract the readers attention which may possibly make it easier to read. There are easy to read flow diagrams with the main points as well as summary information presented in simple tables. For example, the activities, interventions aimed at preventing childhood obesity are presented in tables. There is a brief description of activity or event, contact name and details of the organiser and target group. Other information provided is lifespan and funding of the event and gaps and key areas for future action. This is extremely informative for the reader and encourages networking. These features encourage the document to be read and therefore the information to be disseminated widely.

It was developed following on from a conference where some one hundred delegates came together to highlight local initiatives and the need for a systematic approach. A working group was established to consider the available data for the under nineteen age group and identify the most effective methods to measure, track and understand the childhood obesity epidemic locally. The definition of what is considered as childhood obesity is given. This then provides a baseline for all practitioners involved in this area to use the same criteria and more reliable statistics on the prevalence of obesity. It is acknowledged that there is no BMI data available for pre school children, although routine weighing and measuring is carried out at school entry. The national prevalence levels for obesity in school age children are taken from the Health Survey England cited in LCO (2006) and local figures are provided from the Trends Project cited in LCO (2006)

The main feature of this strategy is that it is entirely focused on childhood obesity. Whereas the previous two strategies reviewed had a much smaller section on childhood obesity which is incorporated in addressing obesity for all ages. There are currently many services and research already carried that contribute to the prevention and management of childhood obesity in the Leeds area. For example, The 'Carnegie Weight Management Residential Programme' is a summer camp for children to lose weight. The additional benefits are; lower blood pressure and improved aerobic fitness, self esteem and sports skills. There are no figures available for how many children attend this camp. LCO (2006: 38) However, there is good evidence for the effectiveness of the camp at three year follow up.

This strategy includes a wide audience of professionals working with the under nineteen age group including, director of children's services, local councils, leisure centres, education, youth and community safety partnerships. The working group consisted of representatives of all of the above professional groups. Also, voluntary and community groups were consulted and their role in many of the interventions is acknowledged. Although there was no specific targeting of fathers, the approach is aimed at the whole family. Therefore, the strategy can be delivered at practically all levels which maximises the population groups that can be reached. There is however, a need for strong leadership across the various professional groups to ensure this issue remains a long term priority. Contact numbers and names for projects and ongoing research were provided to the working group. Therefore, encouraging networking and sharing of knowledge and expertise. Client and service user's views were included as well as professional views enabling the strategy to be more user friendly.

There was no evidence of a consultation process before the final strategy was introduced. This could have restricted constructive feedback before the full initiative was implemented.

The recommendations are based on evidence; and therefore should be more effective. In particular the policy summarises several studies that provide the basis for interventions aimed at school children. Such as, Robinson cited LCO (2006) which showed that school

based health promotion interventions encourage children to spend less time watching television and video games. Interventions are spilt into down, mid and upstream interventions and are supported by evidence. LCO (2006: 12) The policy goes on to explain interventions targeted at the individual or groups are described as down-stream, with those focusing on organisational and community based solutions as mid-stream. Those focusing on government policy changes are up-stream.

The review date is set for ten years following publication. There is no acknowledgement of the need to review as and when there are future changes to NICE guideline publication or new research findings. However, bi annual reports are to be submitted for assessment and review to Children Leeds Partnership (overall accountable body for implementation and monitoring).

There are interventions set up to focus on specific areas such as the disabled, Asian girls, parenting and education about healthy eating. There is input from Child and Adolescent Mental Health Services who can offer support to ensure emotional well being, such as family therapy.

There are a number of pilot initiatives focusing on babies and pre school children. The policy recognises the need to intervene early in life and there are a number of initiatives focusing on disadvantaged families, LCO (2006: 14). The evidence supports the need for more interventions to make it easier for parents of young children to give their babies a healthy start. Such as, parenting skills support, sure start including cooking skills. There are also confidence and self esteem raising groups for young mothers in need.

The strategy is linked to national and regional policies which place obesity in context in the Leeds area. There are targets set which indicate by how much the current rises in obesity need to be reduced. This provides a means to assess how effective interventions are and whether they need to be reviewed. The current service provision in Leeds is outlined including successful community based programmes.

The role of socio-economic status and ethnicity statistics are given for England. Locally it is acknowledged that this data is not available at present. However, it is anticipated that

Trends (2004) data when analysed will provide data focusing on this area. This would then provide a baseline to assess effectiveness of interventions and whether the needs of the group are met.

The complexities of the aetiology of excess weight and obesity are discussed and some of the factors contributing to it at individual, environmental level. The costs to the individual, society and the economic impact on health services are discussed. This provides the rationale for taking action to address this problem at all stages.

The policies aim to improve the health of the local population through implementing effective strategies to prevent obesity and help overweight people to lose weight. They are driven by increasing rates of obesity nationally and the subsequent drain on resources. There is a strong impetus to address the problem at all levels. A multi agency approach is recognised to ensure that individuals, society and the government fully participate in a joined up strategy. The policies recognised that there is a need to co-ordinate the approach between agencies.

There are recommendations for future planning and development of services and policies to tackle obesity in all the areas. There are a number of guiding principles used in the development of this strategy. The main ones being actions based on reliable evidence, followed up by regular evaluation of the efficacy of each intervention. A multi-agency approach is followed along with involving the community at all levels.

In this chapter, three main themes have been identified that are barriers to healthy eating for parents of pre school children. They are lack of knowledge/skills, lack of support and lack of access to affordable healthy foods. The studies are grouped under the three headings and are critically analysed. Three obesity strategies were reviewed and it was noted that there was a huge variance in the amount and types of resources targeting obesity, particularly in children. Interventions aimed at parents of pre school children are limited, with the focus being on school age children. A discussion will follow in the next chapter with relevance to answering the research question and sub questions.

CHAPTER 4 DISCUSSION

4.1 Chapter Preface

This chapter discusses the review of the literature and the findings and the relevance to the research question and the aims of this review. The limitations to this literature review will be considered.

This literature review found that the main reasons parents identify as a barrier to a healthy diet are; lack of support, lack of knowledge/skills and lack of access to healthy affordable foods.

4.2 Lack of support

One of the aims of this literature review was to explore the challenges faced by mothers and fathers. In many of the studies it is acknowledged that lack of support can be a barrier to healthy eating and lifestyles. Furthermore, it is recognised that in many cases it is the partner and extended family that provide this support. Thornton *et al* (2006: 100) found emotional support given by husbands was reported as the strongest influence on women's eating patterns. Also, mealtime patterns and food choices were influenced by work schedules and the husbands' food preferences. It is therefore surprising that no studies appear to have focused on both parents including the extended family. Everett *et al* (2006) concluded that targeting initiatives at fathers' health risk behaviours was important to the health outcomes of the whole family. Hoare *et al* (2002), Horodynski *et al* (2004) reported that the father had also attended health education sessions but the focus was targeted at mothers.

Goldy *et al* (2005: 916) This study identified those most likely to comply with dietary advice had a more positive body image than those that did not and had less:

- neglect of self-care
- weight-related distress,
- depression
- perceived barriers to weight loss.

Healthy eating therefore may also improve mental well being. The study did not establish if the unhealthy diet contributed to the development of psychosocial factors. Alternatively, these factors may have impacted on eating a healthy diet.

The findings suggest that stress from work or school problems, financial issues and bereavement were associated with limited compliance with diet information. Goldy *et al* (2005: 916) The role of emotional well being is recognised as a factor in contributing to obesity. Counselling has been identified as being important to help individuals develop coping strategies and address underlying conflict which may be a cause for over eating. Therefore, it may be necessary to direct resources towards counselling and supportive avenues. Health professionals have a role in identifying those in need of this support and offering it. Health education in antenatal and postnatal groups has been found to be effective with some clients.

> Oakley cited in Hoare et al (2002: 200) 'groups provide social and emotional support and regular contact with peers may provide a protective effect in preventing postnatal depression as well as being a springboard for community development.'

The health action model recognises the importance of basic needs such as hunger, pain and being safe. This model is based on the premise that someone with good self esteem and self worth is more likely to be open to health messages. The focus of this approach is on the environment and social policy. Therefore, learning new skills such as assertiveness and problem solving can help individual resist peer group pressure.

Naidoo and Wills (2000: 229) Empowerment of individuals is the main aim of health promotion in Tones' model and could be incorporated in to health education programmes.

4.3 Lack of Knowledge

Lee *et al* (2005: 65) found that inadequate diet of infants and toddlers was likely to be due to poor knowledge by mothers about how to feed their child. Furthermore, those that did have the correct information may have not used this knowledge due to time, social or family pressures.

Interventions such as health education provide individuals with information about healthy eating and leave the responsibility for making the necessary behavioural changes with them. Omar *et al* (2004: 112) This study found that whilst community education programmes can influence healthy eating and mealtime practices, knowledge alone is not enough for caregivers to make these changes. Horodynski *et al* (2004) also found that knowledge alone did not increase compliance with feeding guidelines for toddlers.'

> Naidoo and Willis 2001: 282) states 'this approach has been criticised for relying on a deficit model whereby a deficiency (usually of knowledge or skills) is identified and then rectified.'

This has been described as 'victim blaming' and does not take into account social and environmental factors, such as social class, ethnicity, gender and poverty. Furthermore, this approach reinforces professional and lay divisions and feelings of public powerlessness.

Hoare *et al* (2002: 200) This study found that interactive group education focusing on infant feeding may be a more effective way of health promotion than the usual health visitor practice of discussing this at home and clinic visits. It also suggests that the programme could have been delivered in other community venues as the health centre may have deterred some women from taking part. It was acknowledged that only one third of the total new parent population chose to attend the groups with the possibility of sample bias.

Ilett *et al* (2004) This study suggests that health education can produce behaviour change and improve diet. However, it could be argued that the sample was biased because only those who were motivated were selected and that further research was needed. There was no control group to check the validity of the findings of the interventions. It was acknowledged that changes were modest and no evidence that the quality of the diet achieved would be adequate to prevent the development of iron deficiency.

In all of the three strategies reviewed, there is a recognised need to address staff training and education to ensure all staff offer consistent and up to date advice and information. Currently, many clients are being given confusing and contradictory information. Whilst all the policies recognise the importance of staff training at all levels it is only part of the action plan for Southampton. This will affect whether staff deliver a consistent message and service. OSS (2003: 5) a guiding principle in Southampton is 'the development of training and education to ensure that there is consistent advice and best practice.' Future needs for staff training are also recognised in Southampton and the focus needs to be on ensuring resources are available to put into practice. The need for multi agency working is recognised in all three strategies, training plans therefore need to incorporate the facilitation of this.

Health professionals have an important role to provide up to date advice on nutrition. More (2005: 105) conducted a survey of health visitors, community dieticians and nursery nurses and found over one third had received less than seven days training on nutrition. Furthermore, nine out of ten felt they needed more information on toddlers' dietary needs, More (2005: 105). The dietary needs of pre school children differ from children over five and the needs of infants under one are different to the needs of toddlers. Children with additional needs can present parents with an even greater challenge. Collins *et al* (2003) identified that parents of children with learning difficulties were looking for help, advice and guidance from health professionals. Instead many felt criticised and blamed for their children eating problems.

Young *et al* (2004) This study evaluated an education programme using social marketing principles. It was acknowledged that this requires an extensive formative evaluation

process, but did increase the success of such an intervention. The need was recognised to tailor interventions to target population through feedback and evaluation.

Flynn *et al* (2005) found the promotion of healthy weight, advice and education at a pre school vaccination clinic to be an effective medium to target health education. This could be incorporated into immunisation clinics in the UK as a means to capitalise on an opportune contact with health professionals. Targeted intervention would still be needed to access those who did not attend for immunisations.

4.4 Lack of access to healthy foods

Poor income and deprivation such as unemployment are risk factors for obesity. It is generally accepted that to eat a healthier diet costs more and in some cases some individuals may lack the skills and resources needed to maintain a healthy eating pattern. For example, budgeting and cooking skills may need to be developed. Cade *et al* (1999) The UK Women's Cohort study which explored food costs found that women in the healthiest diet group spent an additional £617 per year on food compared to the least healthy diet group. The majority of the expenditure was on fruit and vegetables. However, despite the findings from the study seventy per cent of women in the healthiest diet group and sixty per cent of women in the least healthy diet group did not agree it was more expensive to eat healthier. This would suggest that assessment of diet costs is dependant on subjective views rather than facts.

> The National Children's Home (NCH) (2004: 4) conducted a survey in 1991 and 2003 looking at the diets of children and families on low incomes. They found that there was no real improvement in the diets of these families; forty per cent of children ate green vegetables or salad most days compared to thirty five per cent in 2003. 'The proportion of parents eating green vegetables or salads most days rose from forty four per cent in 1991 to fifty one per cent in 2003, but the proportion who ate no fruit or green vegetables most days increased from thirty two per cent in 1991 to thirty seven per cent in 2003, (NCH) (2004: 4)'

The government introduced the 'Healthy Start' scheme in 2006 which replaced the 'Welfare Food Scheme'. This aims to encourage pregnant women and families from low-income groups to eat a more nutritious diet. Vouchers are provided that can be exchanged for milk, fresh fruit/vegetables and infant formula milk. However, some of my clients

have reported that this is hindered by the fact that the vouchers can be exchanged only in specified shops. Furthermore, there is no change given from the voucher so the client has to ensure they purchase enough to use the entire voucher. This can present a problem for some clients who already do not possess the necessary organisational skills and whose lives tend to be chaotic. This could result in those at greatest need not gaining the most from the system. It may be beneficial to assist such individuals to develop and acquire the skills needed, such as problem solving and budgeting.

Whether you act on health advice and change health behaviour will be affected by your beliefs, attitudes about whether the benefits to the individual are worth the cost.

> Naidoo and Willis (2001: 285) 'therefore not only may it be more difficult for those on a low income to act on health education messages about, for example, healthy eating (because healthy food is more expensive) but the motivation to do so may also be less (as healthy food may be a low priority when someone is preoccupied with coping on a low income).'

Boughton *et al* (2006) this study suggests a need to test interventions involving collaborative efforts including government, social policy makers and public health practitioners to improve access to health food for families. For example, developing food skills and household equipment that make it easier to prepare healthy foods. The need to provide better access to shops selling affordable healthy foods was also recognised. Fowles *et al* (2005: 815) found women with nutritionally adequate and inadequate diets stated that convenient access to food and lack of time to get healthier foods was the most common reason affecting their food choice. This supports the role that local and national government has in tackling obesity at an environmental level. Boughton *et al* (2006: 97) health authorities could work with city planners to develop and evaluate policies that encourage the situating of farmer's markets and grocery stores in inner city areas.

> Fowles et al (2005: 817) 'Convenient access to affordable foods and time to purchase and prepare meals were two of the strongest points made by both the unhealthy and the healthy eaters.'

The Southampton strategy acknowledges that obesity is more common in certain ethnic groups and those of low socio-economic status. However, the lack of strategies aimed at these groups could deny them equal access to this service. DoH 1999 cited in OSS (2003: 6) In 1999 obesity was fifty per higher than the national average amongst black-Caribbean women and twenty five per cent higher amongst Pakistani women in the UK. Poverty, lack of support, advice, time all contribute to this problem. However, the Leeds strategy was the only one with specific interventions targeted at ethnic minority groups.

The studies carried in the USA support the view that inequality does increase the likelihood of childhood obesity. Many of the research studies therefore focused on low income families. It may not be possible to directly find comparisons with the socio economic climate of the USA. However, it is clear that there is a strong socio economic contribution to development of obesity and particularly in children.

4.5 Limitations

This is an under researched area and due to the small number of relevant studies, it was necessary to include all of the final selection in this literature review regardless of concerns over the quality, transferability and/or validity of findings. For example, most of the studies selected were conducted outside of the UK. In many of the studies it was recognised that a longer term follow up would have been appropriate to increase validity of the findings. NICE (2006: 8) recommend that there is urgent need for well designed longer term studies with agreed outcomes carried out in normal settings in this country to provide better evidence to what works in both prevention and treatment

Pilot studies were not used in most of the studies reviewed. The advantage of piloting a study would be that the methodology could be refined so that the findings of the completed research can be as valid as possible. LoBiondo-Wood and Haber (2006: 204) 'Pilot studies are invaluable for maintaining accuracy and provide important information for future inquiry that is feasible and well grounded.'

Research shows that lack of health education aimed at fathers is a missed opportunity. Fathers can go along way to supporting their partners and encourage the continuation of behaviour change. There is a need for further research exploring what type of support is needed by families and how the benefits of this could be assessed. Thornton *et al* (2006: 96) This study classified three broad types of support, informational, emotional and instrumental. In particular a further study focusing on the individuals who do manage to eat a healthy diet despite the challenges faced by them could enable interventions to be more client and community centred.

The quality, methodology and results of some of the studies were difficult to transfer to healthcare in the UK. Horodynski *et al* (2004) The use of an untested questionnaire and a small sample size was recognised and that further work was needed test the validity of the questionnaire. A small sample size limits the findings being generalised to other populations and the barriers identified may not reflect those experienced by other communities. Horodynski *et al* (2004) The findings were not transferable because the sample was not ethnically and/or economically diverse.

Bowling (2002: 262) suggests that people from lower socio-economic groups have lower rates of telephone ownership, and consequently there is potential for sample bias with non telephone owners being under-represented in the sample. Everett *et al* (2006) Further bias can result from the fact that men who chose not to take part in this study may lack motivation to change behaviour. The need for further studies using quantative and qualitative methods and a more representative sample is recognised.

Fowles *et al* (2005: 810) This study used group interviews in addition to the twenty four hour recall questionnaire to collect data. Furthermore, it is acknowledged that twenty four hour dietary recall may not truly reflect the women's typical eating pattern. Pope and Mays (2002: 20) suggest group interviews are a quick and convenient way to collect data from several people. This approach is appropriate for this study which aimed to explore in detail healthy eating strategies used by pregnant women.

Everett *et al* (2006) This study did recognise the disadvantages of using self reporting questions in a telephone survey which although cheap and quick; only provide brief answers on suitable non sensitive topics. Cannel et al cited in Bowling (2002: 262) found evidence to suggest there is more accurate reporting of health problems in telephone than face to face interviews. Two possible reasons for this are embarrassment or fear of judgement by the interviewer in a face to face setting. Bowling (2002: 195) Surveys can be designed to measure certain phenomena (events, behaviour, attitudes) in the population of interest (for example, the prevalence of certain symptoms, reported use of health services and the characteristics of health service users). However, in depth interviews may have elicited more deeply held beliefs as the interviewer can ask questions relevant to the subject.

Goldy *et al*, (2005), Young *et al* (2004), Collins *et al* (2003) In some cases it was unclear whether ethical approval had been obtained and in others payments were made to the participants for their time. This could cast some doubt on the validity and bias of the findings. Parahoo (2006: 112) Research ethics committees exist for the purpose of examining the ethical implications of studies and for granting permission, when appropriate. There was little discussion or follow up about support for the participants in the research studies. Identifying children or adults with a health problem or behaviour for the purpose of a research study can have a significant impact on the individual and their family. Polit and Beck (2006: 87) Beneficence places a duty with the researcher to be aware of possible harm and benefit to those taking part.

The available literature reviewed has identified the main barriers to healthy eating. However, there are other factors that have not been identified such as time, boredom, anger and happiness. The reasons that lead to a behaviour such as overeating are as unique as the person presenting with them. There does need to be more research exploring these reasons. Focus groups could be used to collect data about these other barriers.

This literature review identified effective methods to collect data to ensure validity and reliability of findings in future research studies. Thornton *et al* (2006), Young *et al* (2004) These studies used focus groups to collect data. Bowling (2002: 394) suggests focus groups are useful for exploring cultural values, and beliefs about health and disease. Focus groups would be an appropriate method of data collection for further studies exploring barriers to healthy eating for specific populations. For example, young single mothers and Asylum seekers.

> Helman (2001: 31) states 'the role of food in daily life, especially in social relationships, dietary beliefs and practices are notoriously difficult to change even if they interfere with adequate nutrition.' he goes on to say 'before these beliefs and practices can be modified or improved, it is important to understand the way that each culture views food and the way that it classifies it into different categories.'

Lee *et al* (2005: 65) This study found that asking mothers about their diet intake was an effective way to identify infants and toddlers at risk for poor diet quality and therefore poor health. Fowles *et al* (2005) identified using positive deviance methodology, strategies that enabled some low income pregnant women to eat a healthy diet while others did not. The positive deviance approach can assist with the development of interventions to improve people's health. For example, informal health education sessions where women could share their experience of cooking and preparing healthy meals with other members of their community. These findings could be incorporated in to a health needs assessment for a variety of health care professionals, in order to identify those that may benefit from additional support and advice regarding diet.

Chapter 5 Conclusion

National Institute for Health and Clinical Excellence, (NICE) (2006: 8) 'There is increasing recognition both in the UK and worldwide that there is an 'obesity epidemic'. This has been acknowledged by the government, media, professionals and the public. Changes in lifestyle have contributed to this increase. It is widely accepted that action does need to be taken by individuals, society and at policy level. This literature review has confirmed how complex the subject of obesity is and how the causes are unique to the individual. In order for interventions to be effective this has to be acknowledged when developing strategies. Therefore, the interventions needed to assist the individual need to be tailor made to that person's needs. In some cases this may involve the extended family unit. Unless this individual approach is used to address obesity the interventions are going to have a limited impact if at all.

The aim of this review was to see if targeting interventions at the pre school population and their parents was an effective means to address the increasing rates of childhood obesity. I wanted to know what strategies could be used and their effectiveness. Furthermore, I wanted to know how these interventions could be evaluated and independently assessed for validity

Intervention strategies need to encompass medical, behavioural, educational, social and empowerment approaches to health promotion. The medical approach can identify those at risk of developing obesity or those that are obese. Lee *et al* (2005) found screening the mothers' diet was an effective way to identify those at greatest risk of poor quality diet. This can subsequently affect the whole family. The behavioural approach seeks to encourage individuals to take responsibility for their own health and make healthier choices. Health education can raise awareness and increases knowledge about healthy eating. The empowerment approach works with clients and or communities to assist them to meet their own needs. While the social change approach aims to address health inequalities. All these different approaches compliment each other and can provide a framework for professionals to use with clients.

The Leeds Strategy concentrated on obesity in the age range from nought to nineteen years. The other two strategies reviewed both had very small sections on childhood obesity which reflected the amount of work locally that was being done with this population group. Overall the strategy for Leeds appeared to be leading the way in terms of an action plan, research and interventions focusing on addressing childhood obesity.

The Leeds strategy was the only one with specific strategies and action focusing on pre school children and their families. All of the strategies focused on mothers as opposed to fathers and the extended family network. Despite the fact that a lack of support was identified as a major theme that affected the ability to eat a healthy diet, this review found very little research examining strategies aimed at the whole family unit. This needs to be addressed in future research as family support can ensure the success or failure of behaviour change or modification. Everett *et al* (2006) parental obesity and inactivity have been found to be indicator of childhood obesity. This needs to be addressed in the ante natal stage in order to improve paternal, maternal and family health.

This review highlights a need for further research focusing on those with little or no support. Vulnerable families with pre school children face many challenges to eating a healthy diet. Poverty, lack of knowledge/skills, lack of support and access to affordable food contribute to this challenge. There is a need for the government to intervene at policy level to ensure policies promote social cohesion and support. Furthermore, there is a role for local authorities to ensure disadvantaged communities have access to affordable healthy foods and shops.

This literature review supports the view that interventions targeted early in life can be effective long term in addressing obesity not only in children but also in adults. Most parents would benefit from advice and guidance on dealing with behaviour appropriately and not using food as a reward. However, parents with children who have learning difficulties often find this task even harder. This in turn could lead to unmet emotional and physical needs which could result in comfort eating. Parents who have poor coping strategies will also have limited ability to meet their own needs. Those at greatest risk

will be those who are most vulnerable; single parents, disabled persons, children in care and those with little or no support. Toynbee (2004) suggest people will only get thinner when they have things to stay thin for, such as self esteem, respect, jobs and social status. Therefore, government economic policy has a role in narrowing the health gap between the social classes.

Pregnancy and the arrival of a baby may well provide the motivation to change existing behaviour in relation food and lifestyles. Prochaska and DiClemente cited in Naidoo and Willis (2000: 231) The Stages of Change Model suggest that any change is part of an ongoing cycle of change. Therefore, contact with a health professional as part of a bigger health promotion picture could help progress on the road to change.

Health visitors can assess if an individual is ready for a group or would benefit from individual education. An important part of the health visitors' role is advising and supporting parents about introducing their child to solid foods. Those identified as needing additional support continue to receive this information. Therefore, if no contact is made by the family and they are not identified as needing additional support no health visitor contact takes place. In these instances these families will be introducing solid food to their babies without the most up to date knowledge and skills. Furthermore, they may not recognise this is a problem and are laying down foundations for future eating patterns. A way forward could be to offer a contact with all families as they approach introducing their babies to solid foods.

Health education material needs to be available in a form that parents can access. More (2005: 106) 'to reinforce the health professionals' advice, parents need sound, easily accessible materials that they can read and refer to.' This may take the form of leaflets available in a variety of languages or practical talks and demonstrations. Accessing literature in different languages in my experience is constrained by financial costs.

Health visitors have a key role as health educators with a captive audience. However, despite this, an increasing proportion of health visitor posts and responsibilities are being assigned to nursery nurses. While the contribution that nursery nurses make to health promotion is important. It has to be acknowledged that health visitors through their

training and experience have skills and knowledge that is needed to relay health messages to those at risk. It takes skill and judgement to assess an individual's motivation and how receptive they are to making lifestyle changes.

The three obesity strategies recognised a need to work across agencies including professional and voluntary organisations. There was a need to recognise that staff training was essential to ensure a consistent message was being delivered by all members of the caring professions, including health, social and education department. Training delivered across agencies including voluntary organisations could ensure that all staff utilise the same knowledge and skills when working with clients. Representatives from these same groups should be present at policy level when developing local initiatives and strategies to encourage networking among agencies. This multi agency approach reflects the complex nature of obesity in terms of cause and treatment.

The number and range of interventions vary greatly from each geographical area, although, there is no explanation for this.

> NICE (2006: 8) recognises 'there is significant variation in existing service provision and in many places; the multi component programmes that are required for both prevention and treatment are limited.'

There are no statistics available for obesity levels in the pre school population. There is an acknowledgement of the need to collect reliable data about the prevalence rates and the effectiveness of interventions. There is a need to review and develop new strategies to target all sections of society in particular those at greatest need.

Identifying obesity in children is difficult due to how children grow in the under two population. Therefore, without any reliable statistic to establish the extent of the problem it is difficult target interventions at the preschool years. More efficient and effective methods are needed to collect data on prevalence rates, treatments, interventions available and gaps that need to be addressed. This is recognised by all strategies. At a time when resources in the health service are limited it makes it harder to justify these interventions.

The three obesity strategies reviewed all based their recommendations on available research. However, they all recognise that there is a need for further long term studies exploring the effectiveness of interventions. They are all linked to other local and national strategies which compliment each other. This then provides an overall view of the actual position at the local level and how this compares to the national picture.

I identified that more research is needed exploring clients needs and the barriers that individuals and communities identify. For example, how to reach vulnerable groups. The government has recognised the need for a coordinated national approach to this growing problem. NICE (2006: 45) is the first national guidance on the prevention, identification, assessment and management of obesity in adults and children in England and Wales. The guidelines aim to stem the increasing rates of obesity and associated diseases by increasing the effectiveness of interventions and prevention. Another goal is to improve the care for adults and children with obesity particularly focusing on primary care.

However, the pre school population does appear to be lacking in services. In terms of parents with pre school children this is an ideal opportunity to engage with this group. The benefit of targeting resources at this population not only has a health benefit to the adults but to the future generation. Therefore, I would suggest obesity strategies should be including an action plan to target interventions at this group.
This literature review has identified a need to specifically target parents of pre school children in order to address obesity generally and in children. There are a wide range of interventions based on evidence that could address some of the barriers to healthy eating for this client group. The obesity strategies need to focus more initiatives at parents with young children and focus on the whole family and community.

The next step for me would be to carry out a piece of research interviewing parents with pre school children from hard to reach groups. Such as single mothers, ethnic minority groups and those with disabled children. Focus groups or semi structured interviews on an individual basis would be the most efficient form of data collection. In this literature review the studies that provided the most transferable and valid results used qualitative

methods of data collection. In many of the studies the methodology was not clearly described and many would have benefited from longer term follow up.
Strategy developed at a local level is the first step to providing more effective interventions and therefore addressing the obesity epidemic. The NICE (2006) guidelines are a step in the right direction to address the issue of obesity, there remains some strides that need to be taken at all levels. This review was useful and provides evidence to target resources at the pre school population. It did not provide definitive answers and solutions to all situations. However, it did identify that there is a gap in current research and strategies. It has also been established that a framework is necessary to work with families and explore new and alternative strategies that could be employed to address childhood obesity. There needs to be more interventions targeting the whole family early in life to ensure support is available to encourage, support and maintain a change or modification in behaviour.

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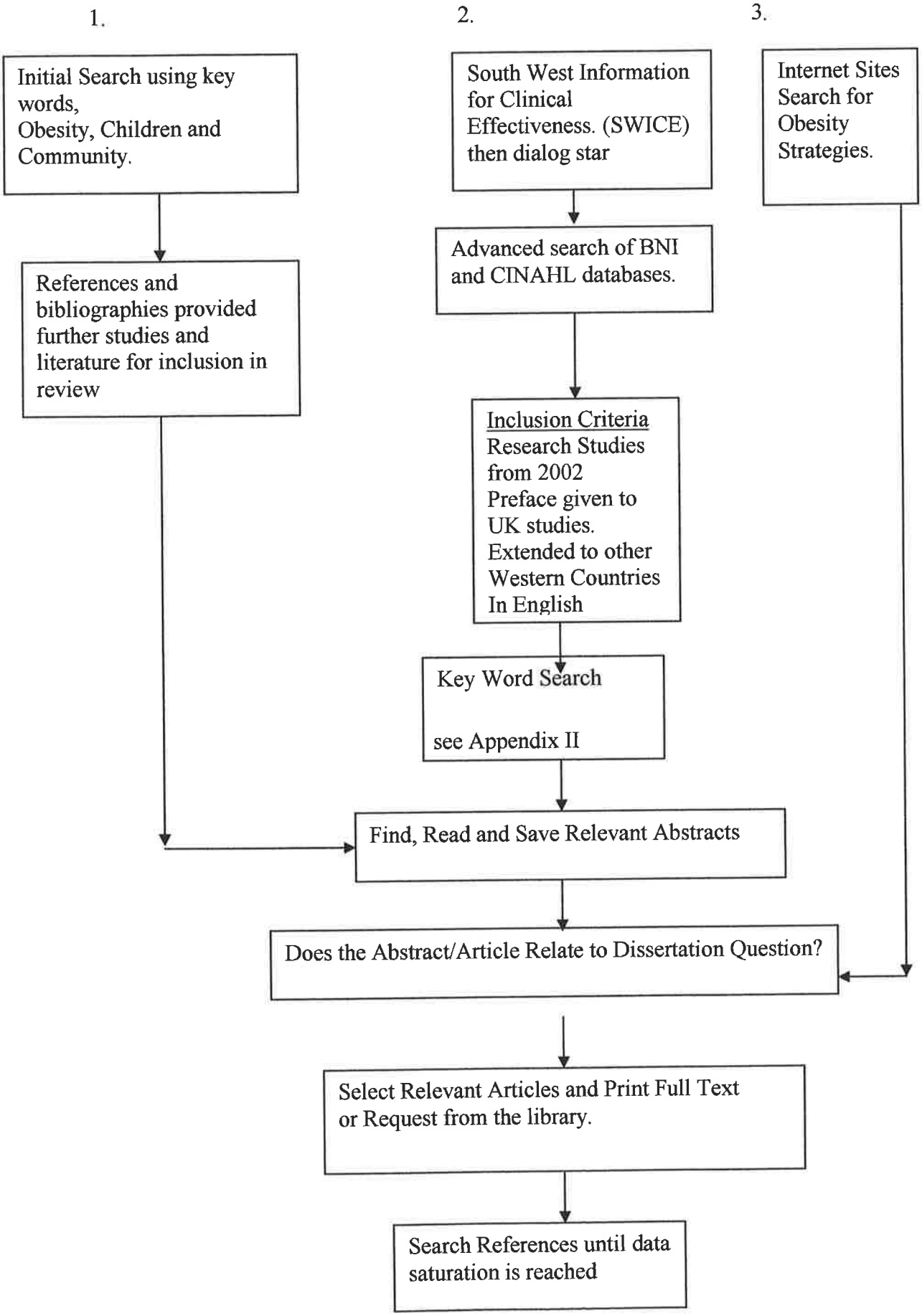
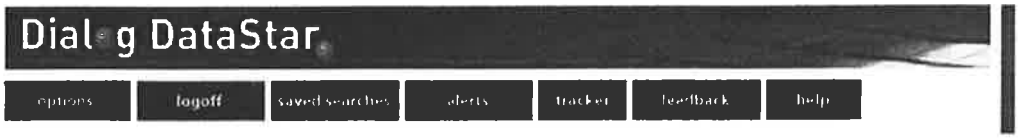
APPENDIX I Literature Search Strategy



APPENDIX II
Advanced Search



databases | easy search | NHS portal | search tips

Advanced Search:

CINAHL (R) - 1982 to date (NAHL)

limit | repeat | remove duplicates | split | email | save search | create alert

Search history:

No.	Database	Search term	Info added since	Results		
CP		[Clipboard]		0	-	
1	British Nursing Index - 1994 to date	healthy ADJ eating	unrestricted	144	show titles	rank
2	British Nursing Index - 1994 to date	CHILDREN-NUTRITION.DE.	unrestricted	434	show titles	rank
3	British Nursing Index - 1994 to date	1 OR 2	unrestricted	539	show titles	rank
4	British Nursing Index - 1994 to date	family AND 3	unrestricted	74	show titles	rank
5	British Nursing Index - 1994 to date	4	various	74	show titles	rank
6	British Nursing Index - 1994 to date	YEAR=2007 OR YEAR=2006 OR YEAR=2005 OR YEAR=2004 OR YEAR=2003 OR YEAR=2002	20020101	55599	show titles	rank
7	British Nursing Index - 1994 to date	4 AND 6	various	56	show titles	rank
8	British Nursing Index - 1994 to date	research AND 7	various	21	show titles	rank
9	British Nursing Index - 1994 to date	pre ADJ school ADJ children	20020101	54	show titles	rank
10	British Nursing Index - 1994 to date	8 NOT adolescent	various	17	show titles	rank
11	British Nursing Index - 1994 to date	(infant ADJ feeding).DE.	20020101	1270	show titles	rank
12	British Nursing Index - 1994 to date	infant ADJ feeding	20020101	1277	show titles	rank
13	British Nursing Index - 1994 to date	12 AND family	20020101	84	show titles	rank
14	British Nursing Index - 1994 to date	13 AND research	20020101	18	show titles	rank
15	British Nursing Index - 1994 to date	obesity AND 14	20020101	0	-	

APPENDIX I (CONTINUED)
Advanced Search

16	British Nursing Index - 1994 to date	11 AND obesity	20020101	11	show titles	rank
17	British Nursing Index - 1994 to date	10 OR 16	various	28	show titles	rank
18	CINAHL (R) - 1982 to date	healthy ADJ eating	unrestricted	1253	show titles	rank
19	CINAHL (R) - 1982 to date	CHILD-NUTRITION.DE.	unrestricted	2321	show titles	rank
20	CINAHL (R) - 1982 to date	18 OR 19	unrestricted	3435	show titles	rank
21	CINAHL (R) - 1982 to date	family AND 20	unrestricted	753	show titles	rank
22	CINAHL (R) - 1982 to date	21 AND research	unrestricted	595	show titles	rank
23	CINAHL (R) - 1982 to date	PREGNANCY.DE. OR FETUS.DE. OR INFANT-NEWBORN OR INFANT.DE..W. OR CHILD-PRESCHOOL	unrestricted	118121	show titles	rank
24	CINAHL (R) - 1982 to date	23 AND 22	unrestricted	201	show titles	rank
25	CINAHL (R) - 1982 to date	YEAR=2007 OR YEAR=2006 OR YEAR=2005 OR YEAR=2004 OR YEAR=2003 OR YEAR=2002	unrestricted	615127	show titles	rank
26	CINAHL (R) - 1982 to date	24 AND 25	unrestricted	137	show titles	rank
27	CINAHL (R) - 1982 to date	united ADJ kingdom	unrestricted	97910	show titles	rank
28	CINAHL (R) - 1982 to date	community	unrestricted	131390	show titles	rank
29	CINAHL (R) - 1982 to date	28 AND 26	unrestricted	69	show titles	rank
30	CINAHL (R) - 1982 to date	health ADJ visitor	unrestricted	7419	show titles	rank
31	CINAHL (R) - 1982 to date	COMMUNITY-HEALTH-NURSING.DE.	unrestricted	12801	show titles	rank
32	CINAHL (R) - 1982 to date	31 AND 29	unrestricted	4	show titles	rank
33	British Nursing Index - 1994 to date CINAHL (R) - 1982 to date [all]	combined sets 17, 29	various	97	show titles	
34	British Nursing Index - 1994 to date CINAHL (R) - 1982 to date [all]	dropped duplicates from 33	various	1	show titles	
35	British Nursing Index - 1994 to date CINAHL (R) - 1982 to date [all]	unique records from 33	various	96	show titles	
36	CINAHL (R) - 1982 to date	29 AND PT=RESEARCH AND LG=EN	unrestricted	54	show titles	rank

show last 10 searches | hide | delete all search steps... | delete individual search steps...

Enter your search term(s): Search tips ☐ Thesaurus mapping

whole document search