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**DEVELOPMENT OF A TELEPHONE QUESTIONNAIRE TO ASSESS PARENTS'
AWARENESS, KNOWLEDGE, BELIEFS AND APPLICATION OF DIETARY FAT
RECOMMENDATIONS FOR PRESCHOOL CHILDREN**

BY

HOLLY JOY MILTON

A Thesis

**Submitted to the Faculty of Graduate Studies
in Partial Fulfilment of the Requirements
for the Degree of**

MASTER OF SCIENCE

**Department of Foods and Nutrition
Faculty of Human Ecology
University of Manitoba
Winnipeg, Manitoba**

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ABSTRACT

Health Canada recommends that the diet of young children should not be restricted in fat, however it advises adult Canadians to restrict fat to no more than 30% of energy. The objective of this study was to develop a telephone questionnaire to measure parents' awareness and understanding of dietary fat recommendations for children and their use of practices to lower fat when feeding their children. The three-step process used to develop the questionnaire included collecting qualitative data through focus group discussions (n=14), review by a panel of nutrition experts (n=12), and pretesting on a random sample of Manitoba parents of two to three year old preschoolers (n=68) obtained from the Manitoba Health Administrative Database. Focus group findings showed that, in general, parents have low levels of awareness and understanding of fat recommendations, however, they express beliefs about the importance of fat for children. The focus groups also revealed that some parents were not concerned about the fat in their child's diet because their child already consumed a healthy diet that is lower in fat. Based on these findings, a telephone questionnaire was developed to determine parents' awareness, knowledge, beliefs, and level of and reasons for concern about fat. The panel of nutrition experts recommended that open-versus closed-ended questions be used to determine practices used to lower fat. As well, parents were asked to express their reasons for concern or lack of concern about fat and the practices they use to lower fat in open-ended questions. A further recommendation was to decrease the emphasis of fat in the questionnaire by putting fat in the context of a list of other feeding concerns and then dividing parents into those who were or were not concerned about fat. The revised questionnaire was pretested on 68 parents (88% response rate). Based on the pretest, two changes were made in the questionnaire: precoded response categories for most open-ended questions were deleted and three questions were added to assess parents' use of substitution as a

practice to lower fat consumption, to determine if preschoolers' consumed the same foods and meals as the rest of the family, and to examine parents' awareness of general fat messages promoted in *Canada's Food Guide to Healthy Eating*. The telephone questionnaire resulting from this three-step process was developed using a sufficiently broad range of parents of preschoolers in Manitoba in the focus groups and pretest and therefore is appropriate to use in a larger study of parents of preschool children in Manitoba.

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1.0 INTRODUCTION

1.1 Statement of the problem

In 1990, Health and Welfare Canada released Nutrition Recommendations for all healthy individuals over two years of age (Health and Welfare Canada, 1990a). Along with other recommendations for nutrients they advised a diet providing no more than 30% of energy from fat. In 1993, Health Canada and the Canadian Paediatric Society released a publication that addressed the concern that the recommendation to restrict fat in children at age two was inappropriate. The 1993 Health Canada publication *Nutrition Recommendations Update...Dietary Fat and Children* recommended that the diets of young children not be restricted in fat since the primary concern at this age is ensuring energy intake sufficient to achieve normal growth and development (Health Canada, 1993).

Despite these recommendations it appears that some parents are feeding their young children low-fat diets that are more appropriate for adults (i.e., no more than 30% of energy from fat) (Boulton & Magarey, 1995; Lapinleimu et al., 1995; McPherson et al., 1995; Nicklas et al., 1992; Vobecky et al., 1992). In some cases these diets have been associated with poor growth and development and deficient intake of certain nutrients (Gibson et al., 1993; Shea et al., 1993; Nicklas et al., 1992; Vobecky et al., 1992; Lifshitz & Moses, 1989).

It seems reasonable to ask why parents would adopt low-fat diets that would compromise their children's nutritional health. A review of the literature identified no studies that addressed this question; however, some studies suggest that parents are misapplying the lower fat dietary message aimed at adults to their children (Epp-Lepa, 1998; Price et al., 1994). Beliefs that reducing fat may prevent future disease and obesity in children may influence the behaviours of parents when feeding their preschool

children (Epp-Lepa, 1998; Price et al., 1994; Lifshitz & Moses 1989; Pugliese et al., 1987).

The message that adults should strive to consume less fat has been well promoted. Current research shows that dietary fat is a source of concern for many Canadians (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999; National Institute of Nutrition, 1997). In the National Population Health Survey, 1994-95, 59% of people over 12 years of age said they were concerned about fat in their diets and claimed to be taking action to reduce their consumption of fat (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999). Given the concern among adults regarding their own fat intake, health conscious parents may be misinterpreting the message, believing that fat should be limited for everyone. If this is the case, these parents may be misapplying the low-fat message to their children.

The research described in this thesis will serve as the basis for a larger final study to be conducted at a later date. This preliminary study involved the development of a telephone questionnaire to assess parents' awareness, knowledge, beliefs, and application of dietary fat recommendations for preschool children. The development of the telephone questionnaire involved a review of literature (Appendix A), focus group discussions, review of the planned questionnaire by a panel of nutrition experts, and a pretest of the pilot questionnaire with parents of preschool children. The results of this study show that the questionnaire developed is appropriate for use in the final study to be conducted at a later date on a large sample of parents of preschool children.

1.2 Significance of this study

Fat is an important nutrient for young children, given their great need for energy to support high growth rates. Because of the public's general concern about reducing fat, it is important to know if parents are aware that the fat message for young children is different than that for adults. Parents could be misapplying dietary recommendations for

adults to young children. Fat restriction may be an example of good advice (for adults) followed to the extreme and mistakenly applied to everyone, even young children.

The results of the final study that will use the questionnaire developed in this research project will be important for many people. These include health professionals who have a role in communicating nutrition messages to the public, parents who are concerned about the health of their children, and the food industry, which may suffer from reduced use of nutritious food products due to public misunderstanding of the dietary fat message for young children. Identifying segments of the target population who lack awareness and understanding of the dietary fat message for children also will allow for the design of interventions targeted to the needs and concerns of specific subgroups.

The success of the final study is dependent on the development of the quality survey questionnaire, which is the focus of the present study. Questionnaires are important instruments in survey research. The results of survey research are only as good as the instrument eliciting the data from respondents. When properly constructed, questionnaires can provide important information for researchers. Successful questionnaires must generate the information desired (validity) and must be properly understood by each person responding to the questionnaire (reliability) (American Dietetic Association, 1992; Talmage & Rasheer, 1981). Carefully designing a questionnaire is a very important process consisting of many steps. When appropriately constructed, administered, and analyzed, questionnaires can advance knowledge and provide the framework for constructive action plans. Proper construction of the questionnaire is the first essential step for ensuring that the data collected in the final study will allow the overall research objectives to be met. The method for developing the questionnaire used to generate preliminary data and to be used in the final study are described in the next section.

2.0 REVIEW OF LITERATURE - QUESTIONNAIRE DESIGN

Questionnaires are part of the measurement aspect of survey research. A questionnaire is a series of predetermined questions which provide important information about behaviours, attitudes, beliefs, and characteristics of populations (American Dietetic Association, 1992). Although there is a large amount of literature describing how to construct a questionnaire (American Dietetic Association, 1992; Babbie, 1990; Frey, 1989; Dillman, 1978), most include a process involving several steps. These steps include: conceptualization, design and construction, pretesting, administration, and analysis and reporting of results (American Dietetic Association, 1992).

2.1 Step one – Conceptualization

The first step in designing a questionnaire is to conceptualize both the study goals and the survey instrument (American Dietetic Association, 1992). Thinking through the entire survey process is a very important step that is often neglected by researchers (American Dietetic Association, 1992).

Before beginning to design the questions, the goals must be defined in a meaningful way. It is important for the researcher to determine how the survey results will be used to ensure that all the questions will provide information relevant to the objectives of the research. Researchers should also differentiate “need to know” versus “nice to know” information that is often never analyzed and lengthens the survey (American Dietetic Association, 1992).

Conducting qualitative interviews with the population of interest before developing a structured questionnaire is common practice when there is a lack of previous research on the area of interest (Morgan, 1998; Steckler et al., 1992). Information obtained through qualitative research allows the researcher to elicit an insider's view from the group under study and provides valuable insight into the complexity and range of human attitudes, values, and behaviour (Bauman & Greenberg,

1992). Focus group discussion is one common method used to obtain information about a subject of interest. Focus groups use guided group discussions to generate a rich understanding of participants' experiences and beliefs (Morgan, 1998). Information obtained from focus groups can aid in questionnaire construction by stimulating new ideas, identifying language or symbols used by the population, and serving as a testing ground for hypotheses (Morgan, 1998). Focus groups will be discussed in further detail in section 5.1.1.

During the conceptualization stage, the researcher must also determine for whom the questionnaire is intended. This involves defining the respondents by one or more characteristics such as age, sex, race, location, health status, socio-economic status, or educational attainment. The researcher should also determine education level, literacy status, ability to recall information, languages spoken, and the potential respondents' physical ability to hear, see, speak, and write (American Dietetic Association, 1992). This information helps to determine potential knowledge and ability of potential respondents to answer questions.

Environmental factors such as whether or not respondents receive mail or have telephones could influence their ability to answer questions and should be determined. It is important to first decide if the questionnaire administration will be done by an interviewer or the respondent (self-administration) and whether the questionnaire will be administered in person, by phone or by mail (American Dietetic Association, 1992). Finally, the initial decisions about the scope and content of relevant survey questions, who will answer these questions, and how the questionnaire will be administered need to be put in the context of the study's budget and timetable.

2.2 Step two – Design and construction

Once the conceptualization process is complete the next step is the design and construction of the questionnaire. One consideration regarding the design of the

questionnaire is the language and readability of the instrument. It is also important to achieve an appropriate reading level and use understandable terms when constructing a questionnaire (American Dietetic Association, 1992). Readability can be estimated through a variety of formulas, including the SMOG formula and the FOG index (American Dietetic Association, 1992).

Another consideration when constructing a questionnaire is the design visualization (American Dietetic Association, 1992). Questionnaire length, layout, visual design, colour of paper, print type, and issues related to respondents anonymity or identification can be determined in the early phases (American Dietetic Association, 1992). Question order or placement is decided once individual questions have been constructed. Question order is crucial for producing a document that flows logically and in a way that encourages response (American Dietetic Association, 1992).

Relevance of questions is a key point to remember at all times during question construction. Using skip questions is advised (e.g., if answer NO proceed to question 4). It is also important to minimize ambiguity when constructing questions. This can be accomplished by providing definitions of terms in the questionnaire instrument. Question length is important to consider, and it is advised to keep questions brief and to the point (American Dietetic Association, 1992).

Wording questions can be tricky and can greatly influence the way respondents answer questions. It is important to word questions to avoid "loading" or "leading" the respondent to a certain answer (American Dietetic Association, 1992). Loaded questions are ones that encourage or suggest an answer to a question. Questions that contain double negatives must also be avoided as they are confusing. It is generally recommended that factual questions are better than abstract questions, because abstract questions may be difficult for the respondent to answer and for the researcher to interpret (American Dietetic Association, 1992).

Another decision in writing questions is to determine response format. The two major response formats are open-ended and closed-ended. The response format to an open-ended question is not specified, whereas the response format to a closed-ended question is specified (American Dietetic Association, 1992). Some questionnaires include both types of response formats, while some use only one. The choice of response format is influenced by the study goals, budget, and timetable.

When open-ended questions are asked, respondents answer in their own words (Babbie, 1982). The researcher then categorizes similar responses, which is referred to as coding (Babbie, 1982). Open-ended questions are useful in preliminary work when the researcher cannot anticipate the various ways in which people are likely to respond to a question. Additionally open-ended questions could shorten questionnaire response time and can allow for creativity, complexity, and clarity in response. Finally, some respondents might appreciate the chance to express themselves in a way that is not structured by the researcher (American Dietetic Association, 1992).

Open-ended questions have drawbacks as well. One of the main problems that can occur during coding is that coders might unconsciously interpret responses in a way that confirms a preconceived idea or conclusion (Babbie, 1982).

Closed-ended questions provide the answer choices from which respondents are asked to select (Dillman, 1978). The answer categories of closed-ended questions must be exhaustive and mutually exclusive. An exhaustive answer category means that the item should offer all the relevant answers. The mutually exclusive criterion means that no respondent should find more than one response equally appropriate (Babbie, 1982). Advantages of closed-ended questions include that standard categories of responses are easier to code and analyze, and that responses are usually relevant to the question. The standardization provided by closed-ended questions allow respondents to be combined and contrasted (Babbie, 1982). Respondents might also understand the

intent of the question more easily when the response categories are presented and could perceive this question type as simpler to answer (American Dietetic Association, 1992). Possible guessing or random responses, inability or unwillingness of a respondent to answer within categories provided, and the possibility of forcing choices into responses are disadvantages of closed-ended questions (American Dietetic Association, 1992).

As mentioned above, there are both advantages and disadvantages to using open-ended or closed-ended questions. However, Babbie (1982) recommends, as a general rule, that open-ended questions are preferred in exploratory studies, when the range of answers to a particular subject is unknown. On the other hand, if the range of relevant responses is fairly well understood, then closed-ended questions are best (Babbie, 1982).

After the questions and response categories have been ascertained, it is important to order the questions. Some general rules for question order include: 1) non-threatening, easy-to-answer questions should come first and should be interesting; 2) sensitive or difficult questions should be placed near the end of the questionnaire; 3) question sequence should follow a logical content order; 4) content categories should begin with broad questions and move to more specific questions; 5) transitional phrases or visual distinctions should be provided between content sections; 6) important items should not be placed last on the questionnaire, as they may be overlooked or left unanswered; and 7) the question numbering system must be clear (American Dietetic Association, 1992). The researcher must also determine the appropriateness of the questionnaire length. It is important to ensure that all information requested is needed and will be used because the longer the questionnaire, the more costly it is in terms of supplies, resources, and time (American Dietetic Association, 1992).

Suggested design considerations for questionnaires used by interviewers include the following: 1) different type styles or some distinctive device should be used to separate parts of the questionnaire to be read to the respondent from parts not to be read to the respondent, 2) questions should be printed only on the front of pages, 3) sufficient instructions should be provided to the interviewer to allow him or her to proceed in the desired question sequence, 4) enough space should be allowed on the form so that the interviewer may record pertinent additional information, 5) response options should be limited to a number that the respondent can easily remember, and 6) the interview should end with a closed-ended, rather than an open-ended, question, which aids the interviewer in closure (American Dietetic Association, 1992).

2.3 Step three - Pretesting

The third step in the design of the questionnaire is pretesting. Pretesting should use the mode of administration specified for the final questionnaire product (American Dietetic Association, 1992). Ideally, pretesting should be conducted with persons typical of the respondent population. As well, the pretest should involve several interviewers if more than one interviewer will be administering the final questionnaire. During the pretest, respondents and interviewers should be encouraged to evaluate questions, and it is also helpful to have the interviewer record the amount of time taken to complete the questionnaire (American Dietetic Association, 1992).

During the pretest, researchers should be aware of common problems that occur with questionnaire design and construction and observe the administration of the questionnaire for clues to these problems. Clues to these problems may include: 1) a large number of non-responses, 2) a lack of variation in response, 3) many responses given with qualifications, and 4) many responses perceived as meaningless (American Dietetic Association, 1992). If any of these problems occur in the pretest, they must be examined to determine if they are indicative of problem areas. After the pretest, the

researcher will review the results and make appropriate changes in instruction, question wording, response categories, question order, and questionnaire length (American Dietetic Association, 1992).

2.4 Step four – Administration

After the questionnaire has been pretested, the revised questionnaire will be administered to the target sample. Achieving a high response rate is a major goal of the administration phase. The researcher should determine how the response rate will be defined before the questionnaire is administered. It is important to decide if the response rate will include all the persons sampled or just those the researcher was able to contact (American Dietetic Association, 1992). Prior to administration of the questionnaire (including pretest), ethical approval must be obtained from the appropriate institutional review board dealing with human subjects (American Dietetic Association, 1992).

Prior to administering the questionnaire, it is important to establish the details of when and how respondents will be contacted. Using interviewers to administer questionnaires also means training the interviewers. The four general rules regarding interviewer training include: 1) reading the questions exactly as worded, 2) probing inadequate answers non-directly, 3) recording answers verbatim and without interviewer discretion and 4) maintaining an interpersonally neutral, non-judgmental relationship with the respondent (American Dietetic Association, 1992).

2.5 Step 5 – Validity and reliability

Babbie (1982) identifies the goals of validity and reliability as the key to a successful questionnaire. A variety of factors contribute to constant (systematic or biasing) errors or random (variable) errors (Babbie, 1982). Errors may come from many sources including the instrument itself; the administration, scoring, mental and physical state of the individual taking the test; and distractions in the physical environment

(Talmage & Rasher, 1981). The presence of constant error will reduce a measure's validity since the observed score will be consistently contaminated by some irrelevant factor (Fishbein & Ajzen, 1975). One example of a constant error is response bias where a subject tries to give socially desirable responses (Fishbein & Ajzen, 1975). Random errors contribute to the unreliability of a measurement instrument. An example of a random error is the state the individuals are in when the survey measure is taken. Participants may be more or less alert or healthy (Baker, 1988). It is possible to increase the validity and reliability of a test instrument by reducing the errors of measurement.

The validity of a test or instrument refers to its ability to measure the phenomenon it intends to measure (American Dietetic Association, 1992). For a questionnaire to be a valid measure, each question asked should generate the information desired (Babbie, 1982). Question validity is usually approached using face validity and construct validity (Talmage & Rasheer, 1981).

Face validity is defined by researcher judgement and is an assessment of whether each individual question truly measures a behaviour, attitude, or opinion (American Dietetic Association, 1992) and also relates to the appearance of reasonableness of the test from the perspective of the test taker (Talmage & Rasheer, 1981). Persons who have expertise with the intended audience or are representatives of the intended audience itself are good judges of face validity (Talmage & Rasheer, 1981).

Construct validity requires that each question be based upon a conceptual rationale (Talmage & Rasheer, 1981). Achieving construct validity requires the researcher to define or describe the construct the test purports to measure, provide evidence that the instrument reflects the proposed construct, base the instrument upon reasonable assumptions about the behavior measured and show that the items make

sense in terms of general, behavioral, social, and or nutritional theory (Talmage & Rasheer, 1981).

Successful questionnaires also must be reliable. To be reliable, the questionnaire must consistently convey the same meaning to each person being surveyed and must be consistent when used repeatedly (American Dietetic Association, 1992; Babbie, 1982). A reliable instrument should be relatively free of measurement errors.

Reliability can be measured by different approaches including the concept of internal consistency (Talmage & Rasher, 1981). Internal consistency refers to the degree to which each item or cluster of items relates to the total test score (Talmage & Rasher, 1981). Statistical formulas such as the Kuder-Richardson and Cronbach's coefficient alpha are among the approaches commonly used to determine internal consistency (American Dietetic Association, 1992; Talmage & Rasher, 1981). Several aspects of an instrument may influence reliability but in general, the greater the number of items in a test, or questions measuring the same concept, the higher will be the reliability (Talmage & Rasher, 1981). Item analysis procedures can often reveal reasons for poor reliability of an instrument (Talmage & Rasheer, 1981). The difficulty index is the percentage of respondents that choose the correct response. For example, an item with a very high difficulty index may be too complicated for the purpose of the test or may be poorly worded. Revision or deletion of items with low or high difficulty index usually will improve reliability of the instrument (Talmage & Rasheer, 1981).

The overall worth of an instrument depends on each question having adequate reliability and the instrument being valid for its specific purpose (Talmage & Rasher, 1981). It is also important to realize that validity and reliability are dependent on the characteristics of the test subjects and the purpose of the assessment. Researchers cannot assume that because a test is valid and reliable for one group, it will be equally

valid and reliable for all groups (Talmage & Rasher, 1981). It is the responsibility of the researchers to assess the reliability and validity of questions by determining if the questions have elicited consistent, accurate, and relevant data (American Dietetic Association, 1992).

When appropriately constructed, administered, and analyzed, questionnaires can provide important information for researchers that may have an impact on clinical practice, community programming, or service delivery. Questionnaires can be useful in determining knowledge and attitudes as both preface to and evaluation of educational efforts.

3.0 OBJECTIVES OF THE FINAL STUDY

The questionnaire developed in this study was designed to be used in a larger final study to be carried out at a later time. The goals and objectives were originally conceptualized on the basis of a literature review (Appendix A) previously conducted by the author for that study. Parents with preschool-aged children (24-48 months) were specified as the intended respondents. A telephone survey was chosen as the mode of questionnaire administration because of its cost efficiency, speed of data collection, and high response rates (Woodward & Chambers, 1980). The objectives of the final study are:

1. To estimate the proportion of parents of preschool children who are aware that the dietary recommendations for fat are different for young children and adults.
2. To estimate the proportion of parents who understand concepts surrounding the fat message as it applies to young children (e.g., energy needs for growth, fat as an important source of energy, the role of higher-fat foods in healthy eating).

3. To estimate the proportion of parents who more frequently use a variety of fat-reduction strategies when feeding their preschool children. For example, substituting higher-fat foods with lower-fat alternatives, substituting specially manufactured low-fat foods for their higher-fat counterparts, excluding higher-fat foods, ingredients and preparation techniques, and cutting down on higher-fat foods, ingredients and preparation techniques.
4. To examine factors that influence parents' awareness and understanding of the dietary fat message for children and use of fat-reduction strategies when feeding their preschool children.

4.0 OBJECTIVES OF THIS PRELIMINARY STUDY

As mentioned previously, this study was designed to develop a telephone questionnaire to assess parents' awareness, understanding, and application of dietary fat recommendations for preschool children. This questionnaire developed during the preliminary study would then be used in the final study. The objectives of this preliminary study were:

1. To develop a telephone questionnaire to assess parents' awareness and understanding of the dietary fat recommendations for children and the parents' use of various practices to lower fat in the diets of their preschoolers.
2. To pretest the questionnaire on a random sample of parents of preschool children.
3. To determine the response rate that could be expected in the final study.
4. To evaluate methods of training, sampling, and data entry and analysis.

5.0 DEVELOPMENT OF THE TELEPHONE QUESTIONNAIRE

The questionnaire was developed following the model presented in section 2.0. The content for the questions used in the questionnaire was based on an extensive literature review (Appendix A), results of focus group discussions with parents of preschool children, consultation with nutrition experts, and the results of pretesting the questionnaire on parents of preschool children.

5.1 Focus group discussions and individual interviews

5.1.1 Qualitative research and focus groups

The area of parents' awareness and knowledge of dietary fat recommendations for children, and their understanding of the importance of fat in children's diets, has not received much attention from previous researchers. Because of the lack of previous research in this area, it was important to collect qualitative data to help determine the content of the questionnaire and appropriate questions to ask.

Qualitative research was conducted to obtain parents' views on the role of fat in preschoolers' diets, including 1) the extent to which parents are aware of fat recommendations for children and adults, 2) any connections they make between the high energy needs of children for growth and fat in the diet, 3) how they approach fat when preparing and buying foods for their preschooler, and 4) what practices they use to lower fat in their children's diets.

Conducting qualitative interviews with the population of interest before developing a structured questionnaire is a common practice (Morgan, 1998; Steckler et al., 1992). These interviews allow the researcher to elicit an insider's view from the group under study and provide valuable insight into the complexity and range of human attitudes, values, and behaviour (Bauman & Greenberg, 1992). Qualitative research is also useful in helping to identify overlooked areas of importance about the subject

(Bauman & Greenberg, 1992). Quantitative methods sometimes fall short when the instruments needed to measure specific knowledge, attitudes, and behaviours do not exist (Steckler et al., 1992).

Although there are many methods of qualitative research, use of focus group discussion was the method chosen for this study, mainly because of the potential for group interaction (Morgan, 1998). Focus groups use guided group discussions to generate a rich understanding of participants' experiences and beliefs (Morgan, 1998). Other advantages of focus groups include providing insight into social relationships, reducing distance between the researcher and the social context, reducing costs, stimulating new ideas, identifying language or symbols not previously acknowledged, and serving as a testing ground for hypotheses to be explored (Morgan, 1998). During a focus group, participants can evaluate the initial contact letter, the questionnaire, and questions to be asked, and they can offer suggestions about the process of being interviewed on the phone.

Besides the advantages of focus groups, there are also disadvantages. These include: group members may experience the pressure to conform, individuals could be stifled rather than stimulated by the group, there may be increased potential for interpersonal conflict in interacting groups, production of irrelevant data may be high, posturing by members of the group could create a level of false information or awareness of the research problem, and the outcome of the interview could possibly be biased by the moderator's role in the group (Morgan, 1998).

5.1.2 Guidelines for conducting focus groups

Number of focus groups and number of participants within each group

The number of focus groups needed is not well defined but rather depends on the homogeneity of the groups and complexity of information sought. Too few groups may lead to premature conclusions or missed information, whereas too many groups is a

waste of time and money. Most projects require three to five focus groups, which assumes that participants are only moderately diverse and that the topic is only moderately complex (Morgan, 1998).

Deciding on the right number of participants for a focus group means striking a balance between having enough people to generate a discussion and not having so many people that some feel crowded out. It is suggested that a group of six to 10 members is usually appropriate (Morgan, 1998).

Choosing participants

A key principle in selecting focus group participants is to achieve compatibility by bringing together groups of homogeneous participants (Halloran & Grimes, 1995). Participant compatibility is important to foster comfort which aids discussion. A person's background or demographic characteristics is one common basis for selecting homogeneous focus groups. Selecting participants to be similar on gender, race, age, location or residence, education level, occupation, income, marital status, and family composition are several characteristics that can lead to compatibility.

Moderator and moderator's guide

The moderator sets the mood of the group by creating a non-threatening, warm, accepting, enthusiastic, and objective environment that encourages all group members to share their views. The moderator facilitates interaction among members, adds comments and probing questions, and summarizes without interfering with the flow of the dialogue.

The moderator prepares a discussion outline or list of questions based on a literature review, consultation with experts, personal experiences, and objectives of the study to be conducted. All groups should be given the same introduction and description of the research questions and asked the same opening questions. Many researchers will choose a compromise, using a moderate degree of structure when the project calls

for learning about both the research team's focus and the participants' interests (Morgan, 1998). In a more structured group the limit should be four or five questions with pre-planned probes under each major topic. It is best to begin with a general question that encourages everyone to share something with the group. This approach fosters a relaxed and informal atmosphere in which more specific information and perspectives can be obtained. The moderator should be flexible enough to explore the unanticipated as it arises, which can often lead to some of the most useful information (Morgan, 1998).

Location and audiotaping

Focus groups should be held in a comfortable and non-threatening environment. The location should be a quiet room with a table big enough to allow all members to be seated around it. Refreshments may be served. The audiotaping equipment should be visible. Taping is useful because it allows the moderator to concentrate on the group and just take a few notes so as not to stifle conversation. Permission to tape and permission to participate in the focus group should be obtained before the meeting (Morgan, 1998).

5.1.3 Procedure for conducting focus groups

Selecting and recruiting participants

The goal of the present study was to develop a questionnaire for the population of parents of preschool children in Manitoba. Therefore parents were chosen to represent a broad range of parents of preschool children in Manitoba. To plan for homogeneity, three focus groups with parents from low, middle and high socio-economic neighborhoods were planned. Planning homogeneous groups by socio-economic status based on family income and educational attainment was important, because these two variables are most consistently shown to be positively associated with health knowledge (Levy et al., 1993).

Parents were recruited from day care centres or community groups located in low, middle, or high socio-economic neighbourhoods. The directors of two day care centres and one community centre were asked if the parents using their service were generally from a low, middle, or high socio-economic group based on what they knew about parents' incomes and educational attainment. A formal screening process to divide participants into low, middle, or high socio-economic status based on established criteria for family income and educational attainment or by Statistics Canada poverty guidelines was not done. Instead, the parents for the three focus groups were included in the low, middle, and high socio-economic groups based on the opinion of the directors of the day care centres and the community centre. Parents were eligible if they had one child who was between the ages of two and three who was not on a low-fat or vegan diet and did not have any medical condition that affected growth or feeding. Two individual telephone interviews were also conducted with parents who were unable to attend the focus groups but still wished to participate. Ethical approval to conduct these groups was obtained through the Ethical Review Committee, Faculty of Human Ecology, University of Manitoba (Appendix B).

Conducting the focus groups

For the first focus group (high socio-economic status), the researcher met with the director of the day care centre to explain the background of the study, elicit support, and discuss the best way to recruit parents. After approval from the ethics committee of the day care centre, the director suggested that a letter (Appendix C) be mailed to eligible parents describing the project, time commitment required, and what would be expected of the participants. The letter also indicated that the parents would receive a call from the researcher to recruit interested parents. The director of the day care centre also sent a supporting letter (Appendix D) which indicated that the project had been approved and that the parents' help would be appreciated. Calls were made a week

after the letter was mailed to recruit participants and determine the most suitable location and time for the focus group. A reminder call was made the night before to parents who agreed to participate. Unfortunately, childcare could not be arranged by the researcher, so participants made their own childcare arrangements.

For the second focus group (low socio-economic status), the director of a day care centre in downtown Winnipeg was contacted by phone to elicit support for the project. The background of the project, the importance of the focus group, and how the parents would be involved were explained over the phone. At the suggestion of the director a colourful poster and sign-up sheet were posted at the entrance to the centre. The director was very supportive of the project and approached and recruited parents she thought would be interested in the project. The director proposed that the focus group be held at the centre itself and offered child care during the focus group. The director reminded the parents about the focus group the day before and the day of the focus group.

Participants for the third focus group (middle socio-economic status) were recruited from members of a mom's group run by a non-profit volunteer organization in a suburb of Winnipeg. The organizer of the group was contacted by phone to explain the project and how the group could be involved. After obtaining ethical permission from the upper manager the organizer asked the group if they would be agreeable to having a discussion with the researcher one afternoon. The group agreed but did not want the session to be tape recorded.

Location and Refreshments

The three focus groups were held at the most convenient location for the parents. Focus group one was held in room 403 of the Human Ecology Building at the University of Manitoba in the morning, and parking passes were provided. The second focus group was held at 4:30 in the afternoon at the day care centre downtown. This time was

considered best because parents were picking up their children and were willing to stay for an extra hour. The third focus group was held at a church in a suburb of Winnipeg during the usual meeting time of the mom's group. Refreshments were served and educational and promotional pamphlets from food companies and marketing boards were supplied for each focus group to thank them for their participation.

Informed consent and tape recording

Signed informed consent was obtained from all participants prior to the discussions. Parents from focus groups one and two agreed to have the discussions audio-taped. The tapes were later transcribed by a transcriptionist. Confidentiality was assured since no names appeared on the transcripts and the audio-tapes were stored in a locked cabinet. Members of the third focus group did not wish to be audio-taped and agreed to participate in the discussion, with the understanding that the discussion would not be taped. The researcher made notes during the discussion and after the discussion recorded comments from the group as best as possible from memory. After the discussion was completed the participants from the third focus group said they had enjoyed the discussion and regretted their reluctance to be taped.

Moderator's Guide

A semi-structured moderator's guide (Appendix E) was developed to provide questions designed to examine parents' awareness of fat recommendations for children, their understanding of the concepts surrounding the fat message for children, and their use of practices to lower fat when feeding their preschool children. The moderator's guide was used to focus the discussion but was not intended to dictate the order of topics. It is advised not to follow a moderator's guide too closely so that other responses can be explored (Morgan, 1998). During the focus groups, the researcher wrote down key words and phrases spoken by participants so more about these words could be asked later in the session. The moderator's guide was modified for the second and third

focus groups based on the response to the questions and the flow of the first focus group.

The moderator's guide used in the first focus group was composed of five major questions which were designed to generate meaningful discussion. The opening question was a general question that encouraged parents to start talking about any concerns they might have had in feeding their preschool child. One question of interest was whether parents would spontaneously indicate that they were concerned about fat. Participants were asked to share their opinions and feelings on topics and what other people had said.

The second question was a follow-up question to the first. Depending on what concerns and issues parents had with feeding their preschooler, the second question was used to guide the discussion to the topic of fat by using the respondents' words. If someone mentioned fat as an issue then the moderator would ask what concerns them about fat. If no one mentioned fat the moderator would ask if fat is a concern for anyone. This question was intended to get parents talking about why they may or may not be concerned about fat. Knowledge was sought on the reasons people had for being concerned about fat, in particular the past or present risk of heart disease or obesity. If appropriate, the respondents' reasons for not being concerned about fat were also explored.

The third question asked parents what they were doing regarding fat in general and for their preschool child. This question was used to get parents talking about general practices they used, specifically food preparation practices, food purchasing practices, and limiting or excluding certain foods. This question was intended to provide information on how parents who are aware of fat recommendations use the recommendations when feeding their preschool children. For parents who do not seem

aware of fat recommendations the conversation was directed to question four which further explored parents' awareness of fat recommendations.

Question four related to parents' understanding of the fat message as it applies to young children. Parents were asked if there were any differences in the way they make decisions about fat in their own diet and that of their child. This question was intended to explore if they thought their children needed different amounts of fat, if they bought different foods for them, and possibly if they had heard of any recommendations on fat for preschoolers that differed from those for adults. If the subject of fat recommendations for children was not discussed then the group would be asked if they had heard about any fat recommendations specifically for children.

Question five asked respondents how important fat was to them when they thought of their preschooler's eating pattern. This question was also intended to elicit parents' understanding of the concepts surrounding the fat message as it applies to young children. It was thought parents would say that preschoolers need more fat and that the parents consider this factor when offering snacks and choosing foods.

As the discussion was ending, the main points were summarized and the group was asked if anything had been missed. At the end of the discussions, parents were debriefed on what is currently recommended by Health Canada regarding the fat in preschoolers' diets. Parents had the opportunity to ask questions about fat and feeding preschoolers or anything else they wished.

Changes to Moderator's Guide

Changes were made to the moderator's guide based on the flow and response from the first focus group. When parents in the first focus group were asked about issues and concerns with feeding their preschooler, the topic of fat did not come up in response to the first question. Instead, parents spoke of their child not eating enough vegetables or balanced meals, not wanting to sit and eat a meal because they were full

from snacking all day, or that their child just wanted to play during meals instead of eating. For this reason, the moderator's guide was changed for the second and third focus groups (Appendix E) so that the first question would encourage parents to talk about fat earlier in the discussion. During the first focus group some parents spoke of their children eating healthy meals as a reason why they were not concerned about fat. The first question in the second and third focus group was changed to ask parents what they think of when healthy eating and feeding their families is mentioned. This question left the discussion open but was thought to potentially lead to parents mentioning fat. Depending on what participants said in response to the first question, the moderator would follow up with a question directing the discussion to fat or else continue on with a line of thinking that would lead parents to talk about fat.

Another change to the moderator's guide for the second and third focus groups was to add probes to explore parents' feelings about common sense, "good and bad" foods, and "junk" foods (if they were mentioned) to determine how these ideas relate to their understanding about fat in their children's diets. These probes were added because parents in the first focus group mentioned common sense as a way of knowing what to feed their children and noted that they were concerned with "good and bad" foods and "junk foods".

Data Analysis

Tapes of two of the focus groups were transcribed by a transcriptionist soon after they took place. Concise notes were made by the researcher immediately after the third focus group. The transcripts and notes were read several times by the researcher to gain an impression of respondents' thoughts and ideas. Sentences and phrasing from focus groups were summarized according to the three research questions. Respondents' words and phrases were used to influence the design and content of the questionnaire.

5.1.4 Results of focus group discussions

The findings of the three focus groups are described below, after a description of the focus group participants. Discussion of how the findings of the focus groups and the individual interviews influenced the questionnaire design will be described in section 5.1.7.

Description of the focus group participants

Overall, 14 parents participated in one of three focus groups. Recruiting parents to be involved in focus groups was challenging due to the time commitment required, the inability to provide child care at the first focus group, the difficulty with finding a time of day that suited everyone, and a variety of unique and unforeseen circumstances.

To recruit parents for the first focus group, 23 letters were mailed to parents with children who were two or three years of age and attended the day care centre. Six parents agreed to participate, and one parent indicated that she could potentially participate if she could make work arrangements. Four parents who agreed to participate came to the first focus group. The other three were unable to attend due to a lack of childcare, an inability to get time away from work, and a back injury. Two of those who were unable to attend agreed to participate in an interview over the phone, which will be described in section 5.1.5.

Three of the five parents who had signed up for the second focus group attended. The director of the daycare centre indicated she had seen the parents the day before to remind them, but on the day of the focus group the two non-attending parents had not dropped their children off at the day care. The third focus group consisted of seven participants who were involved in the mom's program that met the day of the focus group.

Table 1 illustrates the characteristics of the focus group participants. Parents were asked to answer a written six-item demographic questionnaire at the end of the

Table 1. Characteristics of focus group participants (n=14)

Participants	Number of children	Employment status	Marital status	Age	Education completed	Income
Focus Group 1 (n=4)	1 1 1 3*	full-time part-time student full-time	married married single parent married	>40 >40 30-39 30-39	university degree university degree university degree grade 12	>\$50,000 >\$50,000 <\$25,000 \$25,000-49,999
Focus Group 2 (n=3)	2 2 1	student unemployed unemployed	single parent single parent single parent	>40 20-29 20-29	some university grade 12 <grade 12	No response <\$25,000 <\$25,000
Focus Group 3 (n=7)	2 2 2 1 2 1 1	unemployed unemployed unemployed unemployed part-time part-time unemployed	- - - - - - -	20-29 30-39 20-29 20-29 30-39 30-39 30-39	grade 12 grade 12 < grade 12 grade 12 <grade 12 grade 12 grade 12	\$25,000-49,999 \$25,000-49,999 \$25,000-49,999 <\$25,000 <\$25,000 -<\$25,000 -

* Indicates male participant

-Indicates missing data

focus group discussion. Parents were asked to indicate their highest level of education completed, employment status, age, income level, who was responsible for feeding their preschool child, and the number of children they had.

The marital status of the participants involved in focus groups one and two was determined by the researcher during the conversation. Unfortunately, the researcher was not able to determine marital status of participants in the third focus group because questions about marital status were not asked on the demographic questionnaire.

As mentioned previously, parents were not screened into low, middle or high socio-economic groups based on formal criteria for individual family income and educational attainment. Instead, focus groups were planned to consist of parents living in low, middle and high socio-economic status neighbourhoods based on information provided by the directors of the day care centres and the community group. Therefore the individuals who agreed to participate may not be representative of the average neighbourhood income.

In order to confirm if participants were considered to have low, middle or high socio-economic status they were asked to choose the category that best describes their family income. The three family income categories participants could choose from were under \$25,000, between \$25,000 and \$49,999, and more than \$50,000. These categories were based on a previous questionnaire, however, when Statistics Canada data was checked these categories were deemed inappropriate to distinguish between low, middle and high income.

Only 14 parents participated in the focus group discussions which was fewer than anticipated. Based on the problems in recruiting by socio-economic status and the overall small number of focus group participants, the focus group data are pooled instead of comparing by low, middle, and high socio-economic status. Table 1 shows that seven of the 14 participants were unemployed, two were currently in school and five

were employed either full-time or part-time. Six participants were between the ages of 30 to 39, five were between 20 and 29 and three were older than 40. Three of the participants had a university degree while eight had grade 12 and three had less than a grade 12 education. Of the 11 participants who indicated their family income, three had family incomes over \$50,000, while four had family incomes between \$25,000 to \$49,999 and five had family incomes of less than \$24,000.

Halloran and Grimes (1995) note that a key principle in selecting focus group participants is to foster comfort which aids discussion by achieving compatibility. Although the focus groups were not homogeneous on the basis of socio-economic status, a degree of commonality was still achieved because the participants were similar on other demographic characteristics. For example, most participants in the first focus group were married and employed, all participants in the second focus group were single parents and the participants in the third focus group were unemployed or underemployed. As well, group compatibility might have been achieved because their children were attending the same day care or because they belonged to the same mom's group. Even though the focus group participants were not homogeneous based on socio-economic status, they were still active participants and seemed comfortable which is important to foster discussion.

The ability to recruit sufficient numbers of parents and make groups homogeneous on the basis of socio-economic status proved difficult with the approach used. Contacting a greater number of day care centres and recruiting parents by income and education level rather than by the perceived socio-economic status of the neighbourhood or catchment area of the day care centre would likely have achieved larger, more homogeneous groups. Since the findings could not be compared across socio-economic status groups, data from the three focus groups were combined and analyzed thematically.

Themes emerging from the focus groups

The findings from the focus groups are summarized in three sections: 1) parents' awareness and knowledge of the dietary fat recommendation for children, 2) practices parents use to lower fat when feeding their preschoolers, and 3) parents' understanding about the fat message as it applies to young children. Quotes from parents will be used to illustrate the findings. Focus groups one and two are abbreviated FG 1 and FG 2, respectively.

1. Parents' awareness and knowledge of dietary fat recommendations for children

Generally, parents' awareness and knowledge of the fat recommendation for both adults and children was limited. Some parents knew there was a fat recommendation for adults but were unsure about what it was. Typical comments were:

"There's something for adults, I can't remember what it is." FG 1

"As you get older you obviously need less of it (fat) but you still need it. It's just a question of how much." FG 1

It seems that most parents were not aware of a recommendation for fat in a preschooler's diet *per se* but instead appeared to believe that there was a difference between the amount of fat a child needs to eat compared to how much an adult needs. Typical comments were:

"I think, yes, that children need more fat than adults do." FG 1

"There's a certain point like when kids are over the age like 10, they don't need as much fat because they can't move." FG 2

"Adults are so concerned about eating right, and fat content especially these days, and I feel that kids should just be eating well, but shouldn't be concerned about whether he gets homo or skim milk." FG 1

Some parents felt that children can eat the same meals and foods as adults for the most part but that young children also have different needs which must be met.

Parents thought that fat should not be a big issue in feeding children. Parents' thoughts about children eating the same foods as adults are illustrated here:

"Basically what I eat, she eats." FG 1

"If we can eat it, he can eat it." FG 1

"I always think what is the best for them and whatever is the best for them automatically it's the best for me." FG 2

Parents' thoughts that children should be eating the same foods as adults but that they also have different nutritional needs that must be met are illustrated in the following comments:

"As you get older you obviously need less of it (fat) but you still need it. It's just a question of how much." FG 1

"I don't want him to be eating as an adult, fatty foods, but I think that those things don't need to be incorporated into a toddler's diet." FG 1

Parents' explanations for why children have different needs for fat were often linked with their activity level. Phrases used by parents that demonstrate the fat and activity link include:

"...burn it off (fat)." FG 2

"...need fat cause they're always on the go." FG 2

One of the main findings from the focus groups was that, in general, parents were not aware of recommendations for fat, but instead they appeared to have beliefs about fat needs for young children. Parents generally believed that young children can eat as adults do for the most part but that they do require more fat for activity.

2. Practices parents use to lower fat when feeding their preschoolers

During the focus groups, many parents spoke of preparing and choosing "healthy" meals and foods for their preschool children. The healthy meal concept for many parents in the focus groups appeared to involve general feeding practices like

being aware of fat content and eating lots of fruits and vegetables, dairy, whole grains, and healthy snacks. Parents' ideas about healthy eating appear to be similar to what is promoted as the broad ideal of healthy eating in *Canada's Food Guide to Healthy Eating* (Health Canada, 1992).

Parents in the focus groups mentioned some practices they used during meal preparation to lower fat. Some of those practices included baking and broiling, draining fat, rinsing hamburger with water, or absorbing fat with paper towels. Another action to lower fat consumption was eating more or less of certain foods based on fat content. Several parents indicated that they tried to eat less red meat and consume more fish and chicken. Some parents also indicated they try to have enough vegetables and grains. Statements parents made that reflect these practices include:

"I make sure that we don't have a lot of red meat and hamburger." FG 2

"I try to put less meat and more vegetables....It's full of fat." FG 2

"Try to balance meat with vegetables and cereals." FG 2

Some parents indicated that they have the ability to control the amount and frequency that their children consume certain foods. The following comments illustrate how parents feel they are in control of higher-fat foods:

"Can control when kids have higher-fat foods." FG 1

"You can have one or two cookies after supper, not 10." FG 1

"We'll have chips but not all the time, you'll put a little on their plate." FG 1

"If he wanted a hot dog every day, I wouldn't give him a hot dog everyday." FG 1

"Sometimes for a treat we'll have hot dogs and a bag of chips." FG 2

"If they want to have a little bit of chips, you go ahead as long as they're getting vegetables and stuff as well." FG 2

"If you eat enough vegetables, they can have their chips, chocolates." FG 2

"We do regulate....she doesn't have ice cream every day." FG 1

Parents also indicated offering healthy foods during meals or for snacks. The following comments illustrate this practice:

“What I’m offering him...it’s always healthy things.” FG 1

“I noticed if you make them do things for themselves they can eat healthy ...takes a cucumber and dip and runs away.” FG 2

Although parents were not asked directly if they were concerned about their child’s intake of fat, during the focus group discussions it seemed that, in general, parents were not really concerned about fat in their children’s diets. Parents spoke of preparing healthy meals and choosing healthy foods for their children. Choosing lower-fat foods and using lower-fat preparation techniques is part of the general healthy eating message as is including complex carbohydrates, fibre, fruits and vegetables, dairy, and protein sources. It seemed that some parents in these focus groups may not have been concerned about fat because they felt their children consumed a healthy diet which was inherently lower in fat. Parents did mention using practices to lower fat but it appeared to be just a normal aspect of their food preparation.

“I cook what’s healthy for all of us and it is (fat) not even a question.” FG 1

“It’s a common sense thing.” (when discussing fat and planning the diet) FG 1

3. Parents’ understanding of the fat message as it applies to young children

Determining parents’ understanding of concepts included in the fat message for young children was an objective of this research project. Specifically, do parents understand that children have high energy needs, that fat is an important source of energy to meet these needs, and that higher-fat foods can be part of a child’s healthy eating?

Generally, parents do express ideas about the importance of fat for energy and growth. It appears, however, that their ideas are expressed more as beliefs than understanding. A child’s need for fat is often linked with their high activity rates and

parents refer to fat being "burned off." The following comments illustrate parents' feelings about fat in their children's diets :

"Needs fat in their diet because they are growing and they're so active." FG 1

"More fat than we do just because they burn so much more." FG 1

"At home, she just runs so the role of fat, it plays a role." FG 1

"They burn it off as quickly as they eat it." FG 2

"More energized than us, and they're growing." FG 2 (while discussing fat needs)

During the focus group discussions, parents discussed their approach for including higher-fat, low-nutrient foods like chips and chocolate in their children's eating pattern. Many parents noted that including higher-fat snack foods in their children's diets is okay in moderation and that often these foods are a treat or a reward for their children. Some parents appear to feel reassured by the fact that the amount of fat and higher-fat foods are something they can control. As well, some parents noted that it is important that their children eat enough good foods before they can eat snack foods. This illustrates dichotomized thinking that foods are either "good" or "bad." The following comments illustrate parents' approaches to higher-fat foods:

"Common sense, people, like everything in moderation." FG 1

"I think it's important for kids to have potato chips and whatever but again as adults we can control when they have it." FG 1

"Having a chocolate or chips, nothing wrong, but I want them to know which one is the healthy food and which one is goodies." FG 2

"...you've had some pretty healthy meals today, I'll give you some chips." FG 2

Demographics and the issue of weight and heart disease

Socio-economic status, including educational attainment and income level, often influences awareness and knowledge of nutrition issues. In this study there were too

few groups and participants to determine if socio-demographic factors played a role in awareness, knowledge, and practices.

With the exception of one parent, concern about their children's weight was not expressed. Instead, many parents noted that their children were healthy and active and growing properly. The researcher asked parents what they would do if their children did have a weight problem. Parents responded that they would take a more restrained approach with fat as the following comment shows:

"If they (my two kids) were overweight then I would give them less grease." FG 2

The one parent who had been concerned about her child's weight had consulted her doctor, who reassured her that the child's weight was fine.

"I was concerned because you get comments from people on the street like your baby is overweight and my baby is not even a year yet, I don't think she's overweight" FG 2

The issue of fat and heart disease was not discussed. Parents briefly touched on the concept of body image. The following quote illustrates this point:

"I think society just puts too much pressure on people when it comes to weight and the amount of fat our kids eat." FG 2

Since the subject of whether parents were concerned about their child's weight and risk of heart disease was not discussed by parents, it might have been beneficial to ask respondents if these issues were something they thought about. It is hard to know if these were issues parents thought about as they were not asked directly during the focus groups.

5.1.5 Procedure for conducting individual interviews

Two individual phone interviews were administered to parents who were unable to attend the first focus group but were willing to participate in a taped telephone conversation. An interview guide (Appendix F) was used that was similar to the

moderator's guide used during the focus groups. The interview guide differed from the moderator's guide in that it was more directive in asking respondents to think about fat at the start of the interview rather than approaching the topic of fat gradually as was done with the focus groups. A more direct approach was used as there was limited time (15 minutes) for the interview, and the issue of fat may not have come up quickly because there was no potential for group interaction.

The interview guide consisted of eight questions intended to probe respondents' thoughts about dietary fat and feeding their family, their beliefs about the importance of fat in a preschooler's diet, any concerns they may have had about fat, and any practices they used because of their concern about fat. Verbal informed consent to have the conversations taped was obtained from the two respondents. A speaker phone was used to tape the interviews.

Data Analysis

The data analysis was conducted in the same manner as with the focus groups. The interview tapes were transcribed by a transcriptionist soon after the discussions took place. The transcripts were read by the researcher to gain an impression of respondents' thoughts and ideas. Sentences and phrasing from focus groups were summarized into the three research questions. Respondents' words and phrases were then used to influence the design and content of the questionnaire to be developed for the preliminary telephone questionnaire used in this study.

5.1.6 Results of individual interviews

Table 2 illustrates characteristics of the respondents involved in the two individual interviews. The findings from the individual interviews were similar to those of the focus groups. Any information that was different is described below.

Table 2. Characteristics of individual interview participants (n=2).

Respondent #	Number of children	Employment status	Marital status	Age	Highest education completed	Income
INT 1	2	Part-time	married	30-39	grade 12	>\$50,000
INT 2	3	Part-time	married	30-39	university degree	\$25,000 - \$49,999

Some parents in the focus groups discussed preparing healthy meals, which included using practices to lower fat consumption. The two participants in the individual interviews also mentioned that they were attempting to keep the fat content of meals down, but that this was done more due to concerns about the amount of fat in their own diets rather than in their preschoolers' diets. This concern influenced meals prepared and foods bought for the whole family, including the children. The whole family ate the same meals and foods, and therefore the children were getting the lower-fat versions as well. This concept is illustrated by the following comments:

"Keep fat down in everybody's diet...done more so for other family members than the preschooler." INT 1

"Try to keep fat intake in mind when planning meals for myself and husband."

INT 2

"Buy low-fat/fat free condiments, dressing, mayonnaise...cooks with apple sauce in muffins, light peanut butter, but, you know, there again it's not that I'm doing that for the kids, it's more we all share the same food so obviously I'm more concerned about the fat content in my diet than I am in theirs." INT 2

"Many years ago I started buying low-fat products and making lower-fat gravy for myself (from weight watchers) but the whole family eats." INT 1

During the individual interviews, respondents were asked directly what concerned them about dietary fat, whereas the focus groups were not asked that specifically. The two respondents who participated in the individual interviews

mentioned their children's future weight as a reason why they were concerned about fat. One respondent indicated that both her and her husband were overweight and that her child becoming overweight was a concern for her. Fat and heart disease was also mentioned as a concern by one respondent but it was a concern for her husband and herself more than for her children. The following comments illustrate these concerns:

"Well neither my husband or I would waste away if we lost weight. I do have a concern that I don't want my children to be overweight." INT 1

"In society now, children watch more TV and lead sedentary lives and get thinking children have a higher obesity rate now than they ever have in past and why is that...a big part of it is inactivity and higher fat content in diets." INT 2

"Husband is borderline for cholesterol. Concern because of lifestyle and heredity and because of eating habits in the past so I figure an ounce of prevention (referring to lower fat)." INT 1

The fact that these two parents mentioned being concerned about fat in relation to weight and, to a lesser extent, heart disease may be because the individual interviews were more directive and personal. Each individual participant had more time to speak, whereas in the focus groups, participants had to take turns talking. Since the focus groups had group interaction, the discussions revolved around many issues other than fat *per se*, and therefore the relationship of fat to weight or heart disease was never mentioned by the participants or the researcher. This makes it difficult to determine if the parents in the focus groups were also concerned about their child's future weight or risk of heart disease, because the methodology and questions asked were different. It is still interesting, however, that both parents who participated in individual interviews mentioned that they were thinking of their child's weight and heart disease related to fat

intake, as these are cited in the literature as reasons some parents may be concerned about fat.

5.1.7 Implications for the design of the telephone questionnaire

The findings of the focus groups and individual interviews provided many insights into parents' awareness of fat recommendations, their understanding of issues included in the fat message for young children, and the practices they use to lower fat consumption. These insights provided valuable information for development of the preliminary telephone questionnaire.

The findings described above confirmed information found in the literature and provided new information not previously considered. The following findings were used to develop the first draft of the preliminary telephone questionnaire (Appendix G).

1. Low awareness of fat recommendations for adults and children

One of the main findings from the focus groups and individual interviews was that, in general, parents appeared to have a low level of awareness about fat recommendations for adults or children. Some respondents reported being aware that there were fat recommendations for adults but seemed uncertain of the precise recommendation. When asked what the recommendation was they struggled to give the grams or percentage recommended but still were uncertain. It is important to remember that the number of participants in these focus groups was small and therefore it is not known if this low level of awareness would apply to other parents in Manitoba.

Determining parents' awareness and knowledge of fat recommendations for adults and children was considered an important issue to explore in the present study. Therefore four open-ended questions were included in the first draft of the preliminary questionnaire to determine if parents were aware of fat recommendations for adults and children and if aware, what they knew about them (questions 1-4, Appendix G). The

word “guideline” was used rather than the word “recommendation” because it seemed more consumer friendly.

2. Parents lack knowledge and understanding but express beliefs about fat messages for children

Originally, objective two was to measure parents’ understanding of key concepts in the fat message as it applies to young children. Parents’ understanding is considered their knowledge, something based on factual information. After conducting the focus groups it appeared that most parents lack knowledge about the fat recommendations and understanding of the concepts surrounding the fat message. Instead, parents appeared to have beliefs about the amount of fat children need and why fat is needed in children’s diets. This could mean that parental beliefs about concepts surrounding the fat messages as they apply to children would be more appropriate to measure in the final study than their knowledge or understanding. Because of this finding, a belief scale was constructed to measure parental beliefs about dietary fat as it applies to children. The belief scale was constructed with four conceptual domains described below.

Conceptual Domain 1. Since parents’ awareness and knowledge of the fat recommendations was thought to be low, a series of nine, agree/disagree/uncertain statements that measured parental beliefs about the fat recommendations were included in the first draft of the preliminary questionnaire (question 5, Appendix G).

Conceptual Domain 2. During the focus groups and individual interviews parents expressed dichotomized thinking that foods are “good and bad.” Parents approached including “junk foods” as “okay in moderation,” and “junk foods” were given to children provided that their children had eaten healthy foods. “Junk foods” were seen as a treat or reward and as something that parents were responsible for controlling. How parents approach including higher-fat foods in their child’s diet and how they include “junk foods” in a healthy diet seemed an important area to explore. Parental beliefs surrounding the

inclusion of higher-fat foods in their child's diet was measured with eight agree/disagree/uncertain statements (question 11, Appendix G). The words "balance" and "moderation" were incorporated into the belief statements because these were actual words used by focus group participants.

Conceptual Domain 3. Some parents indicated that fat was important because of their children's high level of activity, growth and development. Some parents also noted that children could eat more fat because they have healthy weights and they "burn fat off" right away. Based on parents' comments, parental beliefs about the role that fat has in meeting children's needs for energy and growth were measured with nine agree/disagree/uncertain statements (question 9, Appendix G).

Conceptual Domain 4. A fourth conceptual domain was included that measured parents' beliefs about a low-fat diet decreasing the chance of disease later in life. This fourth domain was included because the two respondents who participated in the individual interviews both mentioned their children's future weight as a reason why they were concerned about fat. Fat and heart disease was also mentioned as a concern by one respondent but it was a concern for her husband and herself more than for her children. Parental beliefs about a low-fat diet decreasing the chance of disease later in life were measured with three agree/disagree/uncertain statements (question 19, Appendix G).

3. Parents' use of practices to lower fat

Many parents in the focus groups mentioned the importance of preparing meals and buying foods that were healthy for their preschooler. Some parents mentioned using lower-fat practices while preparing meals such as baking and broiling meat, rinsing regular ground beef with water, using paper towel to remove fat, using applesauce or yogurt instead of fat when baking, and trying to eat more vegetables, chicken, and fish and less red meat. The practices that parents reported using are similar to practices reported in the literature. It seemed that these lower-fat practices were a routine way of

preparing meals and were seen as a way of healthy cooking. Determining the type and number of practices parents were using to lower fat content when preparing meals for their children was of interest. The researcher had a concern that these parents seem to use lower-fat practices as part of their routine when making meals, so they may not think to mention them when asked what they do when making meals that lowers fat content. For this reason a closed-ended question to determine the practices parents use to lower fat when preparing meals was included in the first draft of the preliminary questionnaire (question 8, Appendix G). This question asked about a list of lower-fat cooking practices and how often the parents used them when preparing meals for their preschooler.

Limiting or excluding consumption of certain foods is another action to lower fat which is cited in the literature. Parents in the focus groups and individual interviews did mention limiting how much and how often their children ate certain foods, such as hot dogs, cookies, fried foods, chips, and fast foods as an action to lower fat. Therefore the practice of limiting the amount or frequency of consumption of higher-fat foods was measured with a closed-ended question (question 10, Appendix G).

Parents mentioned buying lower-fat milk, lean cuts of meat, lean ground beef, as well as specially manufactured products that are lower in fat (e.g., light peanut butter, fat-reduced or fat-free mayonnaise, salad dressing, puddings, dairy desserts). Buying lower-fat foods, including specially manufactured foods, is also cited in the literature as an action to lower fat consumption. Based on the findings from the focus group discussions, it appears that parents are purchasing lower-fat foods and specially manufactured foods, confirming results reported in the literature. In the first draft of the preliminary questionnaire, parents' use of lower-fat products was determined by asking parents if they buy the regular or lower-fat forms of foods popular with preschoolers such as peanut butter, cheese, crackers, etc. (question 7, Appendix G).

4. Parents' concern or lack of concern about fat.

An interesting finding from the focus groups and individual interviews was that some parents indicated that they were not very concerned about fat because they had already done things to lower fat. Many of the parents in the focus groups thought that their preschoolers ate healthy meals and that preschoolers needed more fat. Therefore a question was included in the questionnaire that asked parents if they thought their child ate too much fat, the right amount of fat, too little fat, or if they were not sure (questions 15, Appendix G). To gauge how concerned parents were, they were asked if they were very, somewhat, not too concerned, or had no opinion about how much fat their preschooler ate (question 17, Appendix G).

The issue of obesity and heart disease did not seem to be a concern for most parents in the focus groups, although this apparent lack of concern could be because the parents were not directly asked about these issues. A few parents mentioned that they might become concerned about the amount of fat their preschoolers were eating if their children had an issue with weight or poor eating habits. Some parents mentioned that children could be teased at school if they were overweight, and some parents were not surprised that other parents might be concerned about their child's weight or heart disease. Based on the findings from the focus groups, the reasons why parents may be concerned about fat their preschoolers ate was considered an important area for exploration. In the questionnaire, parents who indicated that they were very or somewhat concerned about the amount of fat their preschoolers ate were asked if there was anything that had caused them to be concerned (question 18, Appendix G). This question was left open-ended.

In summary, the information obtained from the focus groups and individual interviews was useful in deciding what was important to ask in the telephone questionnaire. As mentioned previously, two of the focus groups included fewer than the

six to 10 recommended participants (Morgan, 1998). Focus group one had only four participants and focus group two had only three participants. The third focus group was larger (n=7) but was not taped, which limits the extent to which the information obtained could be used, since direct quotations and words used by respondents in this group were not available for analysis. Despite the small number of participants, the information obtained from the focus groups and individual interviews did give insight into parents' awareness, knowledge, and beliefs about fat recommendations and what practices they were using to lower fat consumption and was useful in the design of the first draft of the preliminary questionnaire.

5.1.8 Revision to objective two for the final study

The original research objectives based on a review of the literature were presented in section 3.0. The information obtained from the focus groups clarified the research objectives. Originally, objective two was to measure parents' understanding of key concepts in the fat message as it applies to young children. As explained above it appeared that most parents in the focus groups lacked understanding of the concepts surrounding the fat message but instead appeared to have beliefs about the amount of fat children need and why it is important. Based on this finding, objective two was revised to measure parents' beliefs about the concepts surrounding the fat message as it applies to children rather than their understanding. The revised objective two for the final study is:

2. To estimate the proportion of parents who more strongly believe that dietary fat has an important role in the diets of preschoolers.

5.2 Conceptualization and operationalization of the variables - Measurement of study variables

Based on the model described in section 2.0 the first step in designing a questionnaire is conceptualization. The objectives of the final study had been defined through the review of the literature (Appendix A); therefore, the next step was to begin conceptualizing what variables would be important to explore and how they could be measured to meet the objectives of that study. Although the problem of parents' awareness and understanding of fat recommendations for children and their use of practices to lower fat had not been previously explored, the literature and information obtained from the focus group discussions and individual interviews helped to determine the content of the questionnaire that was sent to the expert panel of nutrition professionals (Appendix G). Conceptual and operational definitions of the variables were developed for the first draft of the preliminary questionnaire (Appendix G) which was sent to the expert panel. The main variables that were considered important to explore and how they were first conceptualized within each objective are described below.

Objective 1. To estimate the proportion of parents of preschool children who are aware that the dietary recommendations for fat are different for young children and adults.

Parents' awareness of dietary fat recommendations for adults and children was conceptualized as their awareness of information in the Canadian Government documents: *Nutrition Recommendations – The Report of the Scientific Review Committee* (Health & Welfare Canada, 1990a), and *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993). Parents were considered aware that there are recommendations for adults if they answered yes to the question "Are you aware of any guidelines on what fat intake should be for adults?" (question 3). Parents were considered aware that there are recommendations for children if they

answered yes to the question "Are you aware of any guidelines on what fat intake should be for preschoolers children?" (question 1).

Parents were considered aware if they knew, the recommendations for children, as defined in Health Canada's 1993 report *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993), and the recommendations for adults, as defined in Health and Welfare Canada's 1990 report *Nutrition Recommendations – The Report of the Scientific Review Committee* (Health and Welfare Canada, 1990a). The fat recommendation for adults is defined as "the intake of total fat should be restricted to 30% of energy and the intake of saturated fatty acids to 10% of energy" (Health and Welfare Canada, 1990a, p. 199). The fat recommendation for children is defined as "from the age of two until the end of linear growth, there should be a transition from the high-fat diet of infancy to a diet which includes no more than 30% of energy as fat and no more than 10% of energy as saturated fat" (Health Canada, 1993, p. 5).

A respondent's awareness of what the recommendations say for adults was measured by the open-ended question "What do the guidelines say?" (question 4). Based on a respondent's answer to this question, they were categorized as having either a high or low awareness of the fat recommendations for adults. Respondents were considered to have a high awareness of the adult guidelines if they said that adults should be eating no more than 30% of energy as fat.

A respondent's awareness of the recommendations for children was measured by the open-ended question "What do the guidelines say?" (question 2). Based on a respondent's answer to this question, they were categorized as having either a high or a low awareness of the fat recommendations for children. Parents were considered to have a high awareness of the fat guidelines for children if they said that fat should not be restricted in early childhood.

Objective 2. To estimate the proportion of parents who more strongly believe that dietary fat has an important role in the diets of preschoolers.

The belief variable focuses on what the respondents believe about the role of fat in a child's diet. It is assumed that the proportion of parents who are aware of actual recommendations *per se* will be low but, based on the focus groups, it is speculated that many parents will still have beliefs regarding how much fat children should be eating and how fat fits into a preschooler's eating pattern. For this reason it was decided to measure parental beliefs about fat in preschool children's diets. The intentions of the *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993) and the *Canada's Food Guide to Healthy Eating - Focus on Preschoolers* (Health Canada, 1995) documents formed the conceptual framework for the belief scale instrument.

The construction of the belief scale was based on guidelines provided by Fishbein & Ajzen (1975). The belief scale consisted of 29 statements distributed among four concept domains and contained positively-and negatively-worded statements (questions 5, 9, 11 and 19). Parental beliefs about the role of fat in their preschooler's diet was conceptualized as having four domains including parental beliefs about the fat recommendations for preschool children (question 5), the need for fat for energy (question 9), the role of higher-fat foods in a child's healthy diet (question 11), and childhood diet affecting incidence of future disease (question 19). The response format was a Likert-type scale with three categories (1=agree, 2=uncertain and 3=disagree), with a lower score reflecting stronger beliefs about the role of fat in preschoolers' diets that correspond with current guidelines and recommendations (Health Canada, 1995; Health Canada, 1993). Negatively worded statements were coded in reverse.

Objective 3. To estimate the proportion of parents who more frequently use a variety of fat-reduction strategies when feeding their preschool children.

The behavioural variable being investigated is parents' reported use of three types of practices to lower fat in preschool children's diets. The three practices are:

- 1) using lower-fat food preparation techniques, conceptualized as the preparation practices used by parents that lower the total fat in the diets of their children;
- 2) limiting or excluding higher-fat foods, conceptualized as parents cutting back on or cutting out a food from their child's diet because of its fat content; and
- 3) purchasing lower-fat foods to decrease fat, conceptualized as parent's deliberate/conscious use of lower-fat versions of foods typically eaten by children.

Parent's use of practices to lower-fat through preparation, limiting or excluding higher-fat foods, and purchasing lower-fat foods were measured with three closed-ended questions (questions 7, 8 and 10). A parent's use of preparation practices to lower fat was measured by reading parents a list of 12 preparation practices and asking them to indicate if each practice was something they did always, sometimes, rarely or never for their preschooler (question 8). A parent's use of limiting or excluding higher-fat foods was measured by reading a list of six higher-fat foods and asking parents to indicate if they serve each food to their child often, sometimes, rarely or never (question 10). A parent's use of purchasing lower-fat foods to decrease fat was measured by reading a list of 12 foods and asking parents to indicate if they purchase the regular or lower-fat version of each food for their preschooler (question 7).

Objective 4. To examine factors that influence parents' awareness and understanding of the dietary fat message for children and use of fat-reduction strategies when feeding their preschool children.

Other variables that may influence parents' awareness and understanding of the

dietary fat message for children and type of practices the parents use to lower fat when feeding their children were explored. These included:

1. Family characteristics

Family characteristics include rural/urban residence, family type, and socio-economic status.

- a) Rural/urban residence is conceptualized as three categories: Winnipeg, Brandon, and small urban centres and rural municipalities. The measurement of rural/urban residence was coded from the postal codes obtained from the list of names of the sample provided by Manitoba Health.
- b) Family type, measured categorically, included one-or two-parent families. One-parent status was recorded if the parent was divorced, separated, widowed, or never married. Two-parent status was recorded if the parent was married or living common law (question 20).
- c) Socio-economic status, was measured based on family income, education, and employment status of the respondent and spouse/partner.
 - i) Family income was conceptualized as the total family income from all sources, before taxes. It was measured by a closed-ended question containing six income categories. The categories of income are based on Statistics Canada (1996) information pertaining to Manitoba families (question 27).
 - ii) Educational level of respondents and their partner is conceptualized as years of formal schooling. It was measured by the open-ended question "What is the highest grade in school or year at college that you have completed?" Eight response categories were used for coding (questions 21 and 24).
 - iii) Employment status of the respondent and his/her partner is conceptualized as participation in the workforce. It was measured categorically by having the respondent indicate if they were employed part time (less than 30hrs/week), full time (30 hours or

more/week), not employed outside the home, or other (includes students and people on social assistance) (Statistics Canada, 1996) (questions 22 & 25).

2. Child characteristics

Child characteristics included gender and age of the target child.

- a) Gender of the child was recorded as either male or female (based on list of names provided by Manitoba Health).
- b) Age of the preschooler was recorded as either two or three years of age (based on information provided by Manitoba Health).

3. Parent characteristics

The parental characteristics that will be examined include the parent's age, whether or not he or she is a first time parent, sources of nutrition information on feeding preschool children, and whether he or she is concerned about their preschool child eating too much fat and the reason for their concern.

- a) Age of the respondent and partner is measured by a closed-ended question with four response categories of 10-year intervals (questions 23 and 26).
- b) Parent status (i.e., first time parent vs. other children) is coded from information provided by Manitoba Health.
- c) Sources of nutrition information on feeding preschoolers reported as used by parents will be measured with the open-ended question "Where have you got your information that you shared with me today?" (question 14).
- d) A parent's concern about their preschool child eating too much fat was measured by asking parents "How concerned are you about how much fat your preschooler eats? Very concerned, somewhat concerned, or not too concerned?" (question 17). Parents were considered to be concerned about their preschooler eating too much fat if they responded "very" or "somewhat" concerned.

- e) Parents' reasons for being concerned about their preschooler eating too much fat were coded in response to the open-ended question "Is there anything that has caused you to be concerned about the amount of fat your preschooler eats?" (question 18).

5.3 Expert review

The first draft of the preliminary questionnaire (Appendix G) was reviewed by a panel of 15 nutrition professionals to establish face validity. Baker (1988) notes that the most basic method of testing for validity is to carefully examine the measure of a concept in light of its meaning and to ask whether the measurement instrument really seems to be measuring the underlying concept. This form of careful consideration and examination is a method of establishing face validity. Woodward and Chambers (1980) recommend that fellow researchers should be used to evaluate how well the questionnaire will accomplish the study objectives.

The panel of nutrition experts were selected from across Canada and worked in either a research or practical setting. The experts were selected for their experience with preschool nutrition and/or questionnaire development and research.

The experts were given a brief description of the project which included the purpose of the study, target population, sampling procedures, eligibility screen, and objectives of the study. A questionnaire map which included a list of concepts being measured and the questions that measured each concept was provided.

Experts were asked to respond to a set of questions about the content and design of the questions to be included in the questionnaire. They were asked to provide feedback on whether the questionnaire had a logical and continuous flow, whether the language and phrasing of each question was neutral, appropriate, and clear, and whether the language was too vague, elitist, or technical. Comments on the relevance and completeness of the topic area, the research objectives, and if the questions measured the concepts were also requested. Comments from the 12 experts who

responded were summarized and the changes to the questionnaire based on these comments will be discussed in the following sections.

5.3.1 Results from the expert review and revisions to the pilot questionnaire

Continuous and logical flow of questionnaire and appropriate length

1. Change order of some questions

One of the main concerns experts had was with the placement of the questions about awareness and knowledge of fat guidelines at the beginning of the questionnaire. Experts felt these questions could be difficult for parents to answer and generally the first few questions in a questionnaire should be something all respondents can answer. The ability to answer questions gives the respondents a sense of confidence and will keep them motivated to finish the questionnaire. If the first few questions are too difficult, respondents might decide the whole questionnaire could be too difficult for them, causing them to feel inadequate and quit, thereby increasing the non-response rate.

Another concern regarding the placement of these questions was that they might potentially bias the way respondents answer later questions in the questionnaire. If parents indicated that they are aware that children should eat more fat than adults, they could be reluctant to answer honestly about lower-fat practices they are using. For the above reasons, the four questions relating to awareness and knowledge of fat recommendations for adults and children were placed near the end of the revised pilot questionnaire (Appendix H) before the questions pertaining to sources of information and the demographic questions.

2. Shorten the length of questionnaire

In addition to suggestions to change the order of some questions, experts suggested that the questionnaire was too long. Dillman (1978) recommends that a telephone questionnaire take approximately 15-20 minutes to administer. Respondents

feel deceived if they think the questionnaire is going to take 15 minutes but takes much longer. The questionnaire was shortened by eliminating repetitive belief statements and questions that experts felt would not contribute useful information to the research study.

Twenty-nine belief statements exploring four areas of parental beliefs were included in the first draft of the preliminary questionnaire (Appendix G). Nine statements measured parental beliefs about fat recommendations (question 5, Appendix G), nine measured parental beliefs about the role of fat in meeting the unique nutritional needs of preschoolers (question 9, Appendix G), eight measured parental beliefs about the place of higher-fat foods in a child's healthy diet (Question 11, Appendix G), and three measured parental beliefs that a low-fat diet decreases the chance of disease later in life (question 19, Appendix G). Many of the statements were similar to one another but with slightly different wording. This technique was intended to serve as a reliability check.

Experts felt that even though the belief statements were to serve as a reliability check, respondents would likely not notice the subtle differences between statements and might become frustrated thinking that they are answering the same questions. Experts also felt that some statements were too obvious and that few parents would disagree with them.

In the revised pilot questionnaire (Appendix H), 14 of the 29 statements were retained. The order of the 14 belief statements was randomized and they were placed together rather than in four different places.

Appropriateness of response categories

3. Addition of other response categories

Changes in response categories were recommended for three variables including reasons for concern about fat, marital status, and employment status. Experts suggested including the "media's focus on fat" as an additional area of concern about fat. This item was added to the list of potential responses (Appendix H, question 13).

Some experts felt the question about marital status was awkward because it asks respondents if they are married but does not ask if they are in a common-law relationship or with a partner. Since many couples live in common-law relationships but are not married, this question would exclude them. The question was changed to, "Are you married or living with a partner, divorced, separated, widowed or never married?"

Experts recommended that categories labelled "unemployed" or "living on social assistance" should be added as responses to the question regarding employment status. The question was changed so that "not employed outside the home" was included as well as an "other" category which could include answers such as "on social assistance".

4. Change to an open-ended question format

In the first draft of the preliminary questionnaire (Appendix G) submitted to the expert panel, a closed-ended question format was used to determine what practices respondents were using during food preparation, when buying foods, and through limiting or excluding of certain foods. Experts agreed that determining what practices parents are using to lower fat is a relevant research goal but they had some concerns with the use of closed-ended questions.

Because all the practices asked about focused on lowering fat or limiting or excluding foods typically considered "junk food," experts thought there would be a greater chance that parents would answer positively that they were using more practices because they think they should be (i.e., social desirability). Another problem experts had with the closed-ended format was that, with the possible exception of milk, parents are likely not buying two different products for their child and the rest of the household, so asking if they buy the regular or lower-fat version for their preschooler would not provide relevant information. Parents could be introducing their children to a number of lower-fat products because it is practical, since that is what the entire family eats, not because they are intentionally trying to lower the fat intake of their child. Experts also suggested

that asking parents if they limit or exclude a list of certain foods from their children's diets might not be relevant to the research goal. Since children's total dietary patterns were not being examined, what impact if any the elimination of these select foods would have on a child's intake is unknown.

Based on experts' comments, questions to measure practices were changed to an open-ended question format in the revised pilot questionnaire (Appendix H). To determine practices used during food preparation, parents were first asked if there was anything they generally do when preparing foods that would decrease the amount of fat their preschooler ate. If they answer no, the interviewer skips to the next question about limiting or excluding higher-fat foods; if they answer yes, they are asked what they are doing (question 14 and 15, Appendix H). To determine which foods parents exclude or limit, parents were asked if there were any foods they do not give to their preschooler or that they cut down on to decrease fat. Parents who answer yes are asked for examples of foods they cut back or cut out (question 16 and 17, Appendix H). To determine which lower-fat foods parents are buying, parents were asked if there was anything they do when buying foods to decrease the fat that their preschooler ate. Parents who indicate yes are asked what they are doing (question 18 and 19, Appendix H).

The open-ended questions contained precoded categories and space for interviewers to write other responses. The objective of determining the practices used to lower fat will still be met by this alternative measurement technique. Using an open-ended question is considered more valuable, because respondents are given a chance to express what they are doing to lower fat consumption in their own words, and the chances of obtaining socially desirable answers is decreased.

Neutral and appropriate wording, language and phrasing of questions

5. Change wording of some questions

The experts made several recommendations on more appropriate wording and language including using the word "energy" instead of "calories," using the word "amount" instead of "proportion," using the phrase "concerned about" or "pay attention to" rather than "worry," and using statements that focus on children eating "foods" rather than "diets." It was also recommended that the word "diet" be defined or else not be used as it has different meanings to different people. Changes in wording were made to the questions as appropriate.

When the questionnaire was submitted to the expert panel, it was noted that the belief statements were all positively worded. Experts were asked for suggestions for negative phrasing, because including both negatively and positively worded statements is important to provide a check on response set. Experts made recommendations for negatively worded questions which were incorporated.

Relationship of the information provided by the questions to the research objectives

6. Deletion of some questions

All experts agreed that the questions would provide data relevant to the research objectives. There were a few specific questions that several experts felt would not provide information pertinent to the research objectives. Asking parents if nutrition was important to them when choosing food for their preschoolers (question 12, Appendix G) and asking them to indicate how important nutrition was (question 13, Appendix G), were two questions that were eliminated from the questionnaire because it is unlikely that parents would say that nutrition was not important to them when choosing foods for their preschooler (i.e., social desirability).

The conceptual definition of parental beliefs about the role of dietary fat in a preschool child's diet included parental beliefs about the fat recommendations for

children. The *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993) notes that there should be a transition from the high-fat diet of infancy to a diet which includes no more than 30% of energy as fat (which is recommended for adults) (Health and Welfare Canada, 1990a). In the first draft of the preliminary questionnaire, three belief statements were included to measure parental beliefs about this transition. Experts suggested that the concept of a "transition to a lower-fat diet in adulthood" is a very difficult concept for parents to understand and that knowing if parents understood this was not as relevant as determining what parents think about fat in their children's diet right now. Belief statements pertaining to the transition (questions 5d, 5e, 5f, Appendix G) were omitted from the revised pilot questionnaire (Appendix H).

The first draft of the preliminary questionnaire submitted to the experts included a question that was intended to measure parents' knowledge of higher-fat foods (question 6, Appendix G). Respondents were to select which food they thought was higher in fat in response to 11 pairs of foods. Experts felt that this question was too easy and obvious. After reflecting on how the information obtained from each question would be used to meet the objectives of the research it was decided that knowing if parents can select which food is higher in fat would not be critical to the objectives. The question was therefore deleted.

Areas not covered by the questions submitted

Overall, experts felt that the questionnaire was complete and relevant to the study objectives. A few experts suggested that another important area to include in the belief scale was parental beliefs about children eating lower-fat foods now so they will like them when they get older. This statement reflects the belief that preferences for food are determined in childhood. Therefore, the statement "If a preschooler eats lots of high-fat foods when young they will never like low-fat foods" was added as a belief statement in the revised pilot questionnaire (question 20, Appendix H).

Additional expert comments

Experts were asked to comment on the appropriateness of measuring beliefs about fat in children's diets in addition to awareness and knowledge, because it was assumed that knowledge of the fat recommendations *per se* would be low. Experts all agreed that measuring parental beliefs would be a reasonable approach and that it would provide useful information.

Experts were asked to comment on the exclusion criteria used to determine eligibility for participation. Experts agreed that the exclusion criteria were appropriate but suggested that to exclude vegans, the interviewer may need to probe for type of vegetarian diet as some parents may not understand the different types of vegetarians. Directions to interviewers to probe for the type of vegetarian diet and to exclude vegans were added to the questionnaire.

Another suggestion was to change the wording when excluding respondents because their child was on a restricted diet or had a medical condition that affected eating. The wording was changed to read that the questionnaire itself was limited to children who do not have a special diet for heart disease, who do not consume animal products, or who do not have medical problems that affect eating rather than saying we are interested only in children who do not have restricted diets or medical conditions. This approach was more sensitive to parents' feelings rather than the former wording, which could have been interpreted as lack of interest in their child.

7. Decrease the emphasis on fat in the questionnaire

In the first draft of the preliminary questionnaire parents were asked if they thought their child ate too much fat, the right amount of fat, or too little fat (question 15, Appendix G). The problem with this question was that it came at the end of the questionnaire. At this point parents would have already answered questions about what they believe about fat in their child's diet and have been asked to indicate if they use

practices to lower fat for their children. The first draft of the preliminary questionnaire seemed to assume that parents would be concerned about fat in their child's diet, which might not be the case. For this reason, at the beginning of the revised pilot questionnaire, parents were asked to indicate if they were very, somewhat, or not concerned with a list of various nutrition issues related to feeding preschool children (question 12, Appendix H). This list consisted of issues typically noted by parents as suggested by the literature and included the concern that their preschooler ate too much fat. This question was used to divide the respondents into those who are concerned about fat and those who are not. By blending the concern about too much fat in with other concerns, the respondent will not realize immediately that the questionnaire was focusing on fat and may answer more honestly about their concern or lack of concern about their child eating too much fat.

In the first draft of the preliminary questionnaire, parents who said they were concerned about the amount of fat their children ate were asked if there was anything that had caused them to be concerned (question 18, Appendix G). However, it was felt to be important to explore the reasons why parents were not concerned about fat as well since focus groups showed that some parents were not concerned because they had already made changes or thought children needed to eat more fat. Therefore, in the revised pilot questionnaire, respondents were asked why they are concerned about their preschool child eating too much fat or why they are not concerned (question 13, Appendix H).

During the development of the questionnaire the researcher was conscious that the questions being asked focused too much on fat in preschoolers' diets and that this could cause parents to feel that they should be concerned about fat. In the current healthy eating messages promoted for preschool children the fat message is only part of the total healthy eating message. The total healthy eating message emphasizes

achieving adequate energy for growth and development and developing eating patterns which emphasize variety and complex carbohydrate and include both lower- and higher-fat foods. A few experts were concerned that the content of the questionnaire focused too much on fat and not enough on the general healthy eating message for preschoolers. They noted that the focus of the questionnaire separated the dietary fat issue out of the context of healthy eating, and that parents participating in the study would be left with the message that dietary fat is something about which they should be concerned.

The revised pilot questionnaire addressed this concern by reducing the fat focus of the questionnaire and by trying to put the focus on fat within the context of healthy eating. First, fat was put in the context of a list of 10 nutrition concerns for feeding preschoolers, and parents were later divided into those who were concerned about fat and those who were not. Parents were given the opportunity to express their reasons for being concerned or not concerned about fat.

In addition, the questions to determine practices used to lower fat were asked in a two-part question. First parents were asked if they were doing anything to lower fat during 1) food preparation, 2) when buying foods and 3) by limiting or excluding certain foods. The parents who indicate doing something were then asked what they were doing in an open-ended format. This takes the focus away from fat as it is not assumed that parents are doing things to lower fat. Instead parents are given the opportunity to say that they are not doing anything to lower fat, or, if they are doing something, then they answer in their own words. Previously parents were asked if they used an extensive list of lower-fat practices and bought lower-fat foods or limited or excluded certain higher-fat foods. This list of practices was very focused on reducing fat and could have caused parents to wonder if they should be doing more things to lower fat for their preschooler.

Due to the fact that the questionnaire still contained an emphasis on fat, at the end of the interview, interviewers debriefed parents about what is currently recommended by Health Canada regarding fat and feeding preschoolers and discussed fat in the context of healthy eating. The debriefing reinforced that preschoolers should consume a diet with lots of variety that includes both lower- and higher-fat foods to ensure adequate energy and nutrients for growth. Key points about the current recommendations for fat and preschoolers to be used in debriefing were prepared by the researcher for the interviewers. After the debriefing, the parents also had the opportunity to ask about fat or any other questions regarding nutrition and feeding their children. Parents were also offered pamphlets regarding healthy eating for children provided by Manitoba Milk Producers.

In summary, the main changes made to the preliminary questionnaire based on the expert review included: 1) changing the order of some of the questions, by moving the awareness and knowledge questions about fat recommendations for children and adults to the end of the questionnaire; 2) shortening the length of the questionnaire by deleting redundant belief statements or questions that offered data less likely to contribute to meeting the objectives; 3) changing to an open-ended rather than a closed-ended format to determine practices taken to lower fat; and 4) decreasing the emphasis on fat in the questionnaire.

5.3.2 Revision to objective three for the final study

Originally, the third objective was to determine the type of practices parents were using to lower fat for their preschool children (section 3.0). Objective three was modified slightly to determine the practices parents were using to lower fat in the context of their level of concern about their preschooler's fat intake. First, parents were divided into two groups based on whether or not they were concerned about their preschoolers eating too much fat. Next, their reasons for concern or lack of concern were determined, and

finally what, if any, practices they were using to lower fat were determined. The revised wording for objective three is as follows.

To estimate the proportion of parents who:

- a) are concerned that their preschool child eats too much fat and to determine:
 - i) why they are concerned,
 - ii) if they are taking action to decrease fat, and
 - iii) if so, what practices they are taking to lower fat;
- b) are not concerned that their preschool child eats too much fat and to determine:
 - i) why they are not concerned,
 - li) if they are taking action to decrease fat (for other reasons), and
 - iii) if so, what practices they are taking to lower fat.

5.3.3 Revised operationalization of variables for final study

Following the expert review, the conceptualization of the variables remained the same, however, the operational definition of some of the variables was modified to reflect recommendations from the experts. The following are the revised operational definitions for these study variables corresponding to the pilot questionnaire (Appendix H).

Since it is expected that parents' awareness and knowledge of fat recommendations for adults and children may be low, two wording formats will be used to assess awareness and knowledge. Parents were now considered aware that there are recommendations for adults if they answered yes to either the question "Are you aware of any guidelines on what fat intake should be for adults?" (question 21) or the question "Are you aware of any information that talks about the type and amount of fat adults should be eating?" (question 22a). Parents were now considered aware that

there are recommendations for children if they answered yes to either the question “Are you aware of any guidelines on what fat intake should be for preschool children?” (question 23) or the question “Are you aware of any information that talks about fat in the eating pattern of preschool children?” (question 24a).

Based on a respondent’s answer when asked “What do the guidelines say?” (question 22) or “What have you heard about the type and amount of fat adults should be eating?” (question 22a), parents were categorized as having either a high or low level of knowledge of the fat recommendations for adults. Respondents were considered to have a high knowledge of the adult guidelines if they said that adults should be eating no more than 30% of energy as fat.

A respondent’s knowledge about the recommendations for children was measured by two open-ended questions (question 24 and 24a). Based on a respondent’s answer when asked “What do the guidelines say?” (question 24) or “What have you heard about information that talks about how to include fat in the eating pattern of preschool children?” (question 24a), they were categorized as having either a high or a low level of knowledge of the fat recommendations for children. Parents were considered to have a high knowledge of the fat guidelines for children if they said that fat should not be restricted in early childhood.

The measurement of beliefs was changed by eliminating 15 belief statements that were considered repetitive by the experts. The belief scale now consisted of 14 instead of 29 belief statements (question 20). The belief statements were still distributed among the four concept domains as previously described and consisted of both positively and negatively worded statements. Table 3 presents the conceptual domains and the corresponding belief statements based on recommendations by the expert panel.

Table 3. Conceptual domains and corresponding belief statements.

Conceptual domain	Belief statements
<p>Domain 1 Fat recommendations for preschool children</p>	<p>1. Preschool children should eat low-fat diets just like adults should (negative wording)</p> <p>6. It is best to limit a preschooler's fat intake just as we do for adults (negative wording)</p> <p>9. Parents should try to limit the amount of fat their preschoolers eat as much as possible (negative wording)</p>
<p>Domain 2 Need for fat for energy</p>	<p>3. It is more important for preschoolers to have enough energy to grow than it is for them to have a low-fat diet (positive wording)</p> <p>4. Since preschoolers are small they don't need much energy or fat (negative wording)</p> <p>5. Higher-fat foods can be important for preschoolers to help meet their high energy needs. (positive wording)</p> <p>11. Cutting out higher-fat foods would make it difficult for preschoolers to meet their high energy needs (positive wording)</p> <p>13. It's okay for preschoolers to eat a bit more fat because they need energy to grow (positive wording)</p>
<p>Domain 3 Role of higher-fat foods in a child's healthy diet</p>	<p>7. If preschoolers eat lots of high-fat foods when young they will never like low-fat foods (negative wording)</p> <p>8. Preschoolers should eat balance of higher-fat and lower-fat foods (positive wording)</p> <p>10. Higher-fat foods like chips and chocolate are okay for preschoolers to eat in moderation. (positive wording)</p> <p>12. Foods that are really high in fat have no place in a child's healthy diet. (negative wording)</p>
<p>Domain 4 Childhood diet affecting incidence of future disease</p>	<p>2. A child who eats lots of high-fat foods is more likely to be overweight later on (negative wording)</p> <p>14. A child who eats lots of fat when young is more likely to get heart disease as an adult. (negative wording)</p>

Based on the recommendations from the panel of nutrition experts the questions to determine parents' use of practices to lower fat were changed from a closed-ended question format to an open-ended question format. A parent's use of practices to reduce fat was now measured with a question that asks respondents to indicate if they do anything when preparing foods or buying foods to decrease the fat their preschooler eats or if they cut back on or cut out certain foods to reduce fat (questions 14, 16 and 18). Parents who answered yes to these questions were asked what they were specifically doing in three open-ended questions (15, 17 and 19).

The measurement of parent's concern about their preschool child eating too much fat was changed so that parents would be asked about 10 nutrition issues instead of just asking about fat. Parents were then asked to indicate if they are very concerned, somewhat concerned or not concerned about each one. Parents were considered to be concerned about their preschooler eating too much fat if they respond "very" or "somewhat" concerned to the statement "My preschooler eats too much fat" (question 12). Parents were considered to be not concerned about too much fat in their preschooler's diet if they responded "not concerned."

Previously parents were only asked for reasons why they were concerned about the amount of fat their preschooler ate, but not for any reasons why they were not concerned. Parents' reasons for being concerned about their preschooler eating too much fat were coded in response to the open-ended question "What are some of the reasons why you are concerned about that (preschooler eating too much fat)?" (question 13 booklet 1). Parents' reasons for not being concerned about their preschooler eating too much fat were coded in response to the open-ended question "Could you please tell me what some of the reasons are why you, in particular are not concerned (about your preschooler eating too much fat)?" (question 13 booklet 2) .

Previously the child characteristics of gender, age, and birth order were to be coded from information provided by Manitoba Health. Manitoba Health does not provide that information and therefore questions to determine the gender, age and birth order of the target child were included in the questionnaire.

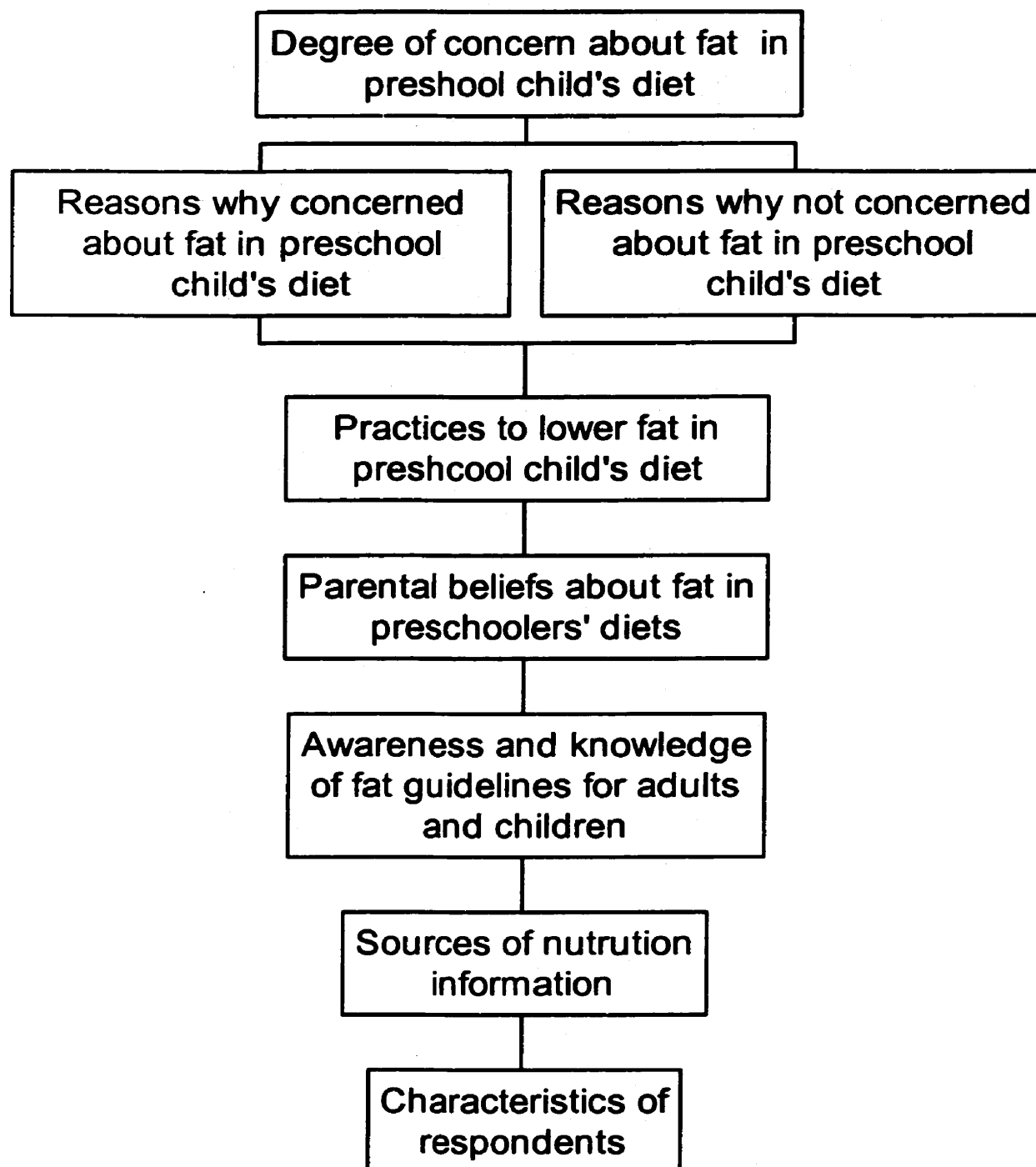
- a) Gender of the child was recorded as either male or female (question 6).
- b) Age of the preschooler was recorded as either 2 or 3 years of age (question 7).
- c) Birth order of the child was recorded as first born, second born, etc.. It was coded according to the question "How old are your children, starting with the youngest?" (question 27).

A question to determine parent status was added as well. Parent status (i.e., first time parent vs. other children) is coded from the question "How old are your children, starting with the youngest?" (question 27).

5.3.4 Flow-chart of pilot questionnaire

Figure 1 represents the flow of the questionnaire used in the pilot study. Respondents were asked questions from one of two different questionnaires depending on their degree of concern about fat in their preschooler's diet. The two questionnaires differ in the questions used to assess the reasons why respondents were or were not concerned about their preschooler eating too much fat and in the transition statement that assessed practices used to lower fat in their preschooler's diet. The remaining questions to assess practices, beliefs, awareness, knowledge, sources of nutrition information, and characteristics of respondents are the same for the two questionnaires.

Figure 1. Flow-chart of revised pilot questionnaire.



5.4 PILOT STUDY

5.4.1 Purpose of pilot study

When conducting a survey it is often extremely valuable to conduct a pilot study. Although it is tempting to design a questionnaire and immediately use it to collect data from a population, it is often a more efficient use of time to conduct a pilot study on a small sample before using the questionnaire in a major study (American Dietetic Association, 1992). The pilot study provides guidance for shaping the final study and is useful for working out "bugs" (Mauch & Birch, 1989). A pilot study also allows an opportunity to learn more about the views of respondents and reactions to questions (Mauch & Birch, 1989).

The purposes of a pilot study include determining the feasibility of proposed research procedures, examining the reasonableness of assumptions, performing a preliminary test of hypotheses, determining the appropriateness of measurement instruments, and estimating the response rate so that an appropriate sample size can be determined for the main study (Long et al., 1985).

A pilot study helps with decisions about revision of proposed procedures. Changes made could include changes to procedures, improved measurement of variables, and a better design for the main study. The results of such a study could also cause modifications to existing hypotheses or suggestion of new hypotheses (Long et al., 1985).

A pilot study should be conducted as closely as possible to resemble the main study. The sample used should be representative of the sample intended for the main study to provide an accurate indication of potential response rate. Long et al. (1985) suggest that a sample of 30 or more individuals is desirable to field test the survey

instrument, although more may be required depending on how many groups are required.

5.4.2 Objectives of pilot study

1. To evaluate the flow of the questionnaire, appropriateness of the questions, and respondents' understanding of the questions.
2. To evaluate the response rate and motivation of respondents to participate.
3. To evaluate the respondents' feelings and reactions to the questionnaire.
4. To evaluate the length of questionnaire.
5. To evaluate the process of training interviewers.
6. To evaluate the proficiency of interviewers to administer the questionnaire.
7. To evaluate the process of entering and analyzing the data.
8. To evaluate the match of data collected to the research questions.

5.4.3 Sampling procedure

Preschool children between the ages of 24 and 48 months were chosen for inclusion in the study. Children of this age were chosen because the Health Canada document *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993) targets children from the age of two until the end of linear growth. The recommendations for children were developed to address the concern that a diet comprising no more than 30% of energy as fat, which is recommended for adults, was not suitable for children at age two.

A random sample of children (24-48 months) was selected from the population of preschool children in Manitoba. The sample was obtained from the Manitoba Health Administrative Database which lists all persons who have medical coverage. Access to the database for research purposes was given with the approval of the Access and Confidentiality Committee of Manitoba Health.

Children who were healthy were included in the study. Children who did not meet the health criteria were screened out at the beginning of the questionnaire, not at the point of sampling. Children were considered ineligible for the study if they were on a restrictive or modified diet prescribed by a doctor or dietitian. Diets that were excluded include energy-modified diets (for cerebral palsy, cystic fibrosis, and failure to thrive) or fat-modified diets (for epilepsy, heart disease, and fat malabsorption). Children who consumed a vegan diet that excludes all animal products were also excluded, as were children with medical problems that affect growth or eating, such as cystic fibrosis or physical disabilities. The results of the study can thus be generalized to Manitoba parents of healthy children aged 24-48 months.

It was determined that a sample size of 30, 6% of the desired sample for final study ($n=500$), would be sufficient to pretest the questionnaire and to meet the objectives of the pilot study (refer to section 5.4.2). Manitoba Health provided a random sample of 2500 names to meet the sample required for the final study ($n=500$) and the pilot study ($n=30$). Manitoba Health randomly selected one child per family if two were in the desired age category. To determine the number of respondents who would need to be sampled in order to have a sample of 30 completed questionnaires, the response rate from a previous study that used a sample of preschool children in Manitoba, also drawn from the Manitoba Health Database, was consulted (Trumble-Waddell et al., 1998). In that study, one person for every four sampled completed the survey. The non-responders included people that could not be contacted (unable to find telephone number, moved, no contact after eight call-backs) or who refused to participate when contacted. Based on results of this study, it was estimated that 150 letters would need to be mailed to be assured that 30 questionnaires would be completed. The 150 names selected to receive a letter was a random subset of the 2500 names selected.

5.4.4 Telephone questionnaire

A telephone survey method was chosen for the study because of its cost efficiency, speed of data collection, and potential for high response rates (Frey, 1989; Woodward & Chambers, 1980). Repeated call-backs can be made with very little cost, and people can be reached in diverse geographic locations (Dillman, 1978).

Telephone survey questions can be complex, open-ended, and highly detailed. The sequence can be controlled, and explanations, probes, and screening questions are possible (Woodward & Chambers, 1980). The length of an interview is sometimes listed as a disadvantage, but it has been found that once people are on the phone the length of the interview does not appear to be a problem because only a very small percentage of people will terminate the phone call after the interview has started (Dillman, 1978). When people are interested in the topic of the survey, they are willing to talk for a longer period of time on the phone.

Telephone surveys, as with other survey methods, have certain disadvantages. Telephone surveys are limited to people with telephones, and some people have unlisted numbers (Dillman, 1978). However, the number of people with telephones is high in most communities: 97% of households are estimated to have telephone service according to United States data (Schucker et al., 1987), and few people have unlisted numbers (Woodward & Chambers, 1980). Random digit dialing is an alternate method of conducting telephone surveys that does not rely on using a sampling frame but instead uses a computer to select the numbers to be called (Baker, 1988). Another possible disadvantage is that long questions, questions with a large number of response categories, and ranking questions are difficult to ask over the phone. As well, the interviewer is unable to see non-verbal expressions to know if the questions are understood (Woodward & Chambers, 1980; Dillman, 1978).

5.4.4.1 Procedure to obtain telephone numbers

An assistant was hired to obtain the telephone numbers matching the names selected for the pilot study. The process of finding these telephone numbers was challenging. For those persons living in Winnipeg, the process included consulting the Manitoba Telephone System City Directory, Who Called Me, the Henderson Directory, 411 on the Internet, and finally the City Rolls at City Hall.

The process of locating phone numbers for the rural areas was even more difficult, as many of the names have a box number, rural route number, or are general delivery. For those rural names with a street address, the Rural Manitoba Telephone System Directory and 411 on the Internet were consulted. To find addresses for those rural names where the address is listed as a box number, rural route numbers, or general delivery, the Municipal Rolls were examined.

5.4.5 Interviewer training

A well-designed questionnaire does not ensure valid data gathering for a telephone survey. Poor interviewing can compromise the quality of data collected. Data quality can be compromised by interviewer bias, inaccurate recording of responses, failing to follow correct procedures, and failing to establish proper rapport with respondents (Babbie, 1995; Frey, 1989). The goal of training is to teach interviewers to use proper techniques and to collect data in a standardized way.

5.4.5.1 Objectives of training

1. To ensure the standardized use of all questionnaires.
2. To enhance interviewer ability to increase response rate.
3. To enhance skills in general interviewing techniques such as probing, following question and wording sequences, pacing, pronunciation, and question presentation.

4. To clarify issues of ethics and confidentiality of questionnaire data, names of respondents, etc.
5. To enhance proficiency in administering the questionnaire.

Two nutrition professionals were recruited as interviewers for the pilot study. Interviewers were selected based on quality of voice and clarity of speech. Two-day training sessions took place at the University of Manitoba. Training included information on the important role of interviewers, valuable interviewer skills, guidelines for interviewing including directions and skip patterns, following instructions, maintaining the neutral role of the interviewer, probing and clarifying responses, overcoming difficulties, dialing procedures and recording responses.

The interviewers were given instruction on how to increase response rate, answer respondents' questions, choose the proper person to be interviewed, and fill out various forms such as call records and time sheets. Interviewers were provided with tips on how to increase response rate, how to answer frequently asked questions, and how to end the interview, including a debriefing on the fat recommendations for children. Issues of ethics and confidentiality were also discussed.

Interviewers reviewed the introductory letter, questionnaire, standard responses to frequently asked question, responses to refusals, and the debriefing of the recommendations. Minor changes to wording as suggested by the interviewers were made on the questionnaires and other forms before the final questionnaire was sent for printing.

Training interviewers to effectively administer the survey instrument is very important. Interviewers need to be familiar and comfortable with the wording and flow of the questions so that the interview resembles conversation. Interviewers must feel comfortable answering common questions respondents may ask and know how to respond in many different kinds of interview situations.

Practice is the best way to ensure that interviewers are comfortable and proficient at implementing the survey. Practicing also allows interviewers to ask any questions they may have while reading the survey aloud and allows the researcher to give feedback on clarity or pace of reading.

Interviewers were given the option of reading the questions in private into a tape recorder so they could listen to how they sound. The two interviewers felt very comfortable with the one another and indicated they would prefer to practice on each other rather than read into a tape recorder. Interviewers practiced reading the survey, answering questions, increasing response rate by encouraging those refusing to participate, and probing. Since not all respondents are willing to participate and some may have more difficulty when answering the questions, some role playing was done. The person who was playing the respondent took on different characteristics, such as being uncooperative, shy, very talkative, etc. This gave the interviewers a chance to practice handling different types of situations.

Both interviewers also practiced conducting interviews with a parent of a preschooler over the phone. Practicing over the phone helped them become familiar with the process of dialing, using the phone, and recording answers. It also gave them an idea of possible potential responses.

5.4.6 Study implementation

5.4.6.1 Letters to respondents

After receiving ethical approval from the Ethical Review Committee, Faculty of Human Ecology (Appendix I), an introductory letter (Appendix J) was sent to 150 parents of preschool children in order to introduce them to the study and solicit their support. The introductory letter was mailed approximately one week prior to the respondents being contacted by telephone.

5.4.6.2 Introduction to survey and calling procedures

The telephone interviews were administered by the author and two trained interviewers. The interviewers asked to speak to the mother first and then mentioned interest in speaking to the person primarily responsible for feeding the preschool child. Responses to each question were written directly on the questionnaire. Eight telephone calls were made to each subject before they were considered a "non-contact."

Telephone calls were made at different times of the day and on different days of the week, including weekends, to maximize the possibility of reaching each respondent. The phone was allowed to ring six times before terminating a call attempt. Those who refused to participate in the questionnaire were asked to answer a six-item socio-demographic questionnaire (Appendix K) to determine if those who answered the questions differed from those who did not.

5.4.6.3 Questionnaire changes

The revised pilot questionnaire (Appendix H), which was based on focus groups and the expert review, was administered to a sample of 59 people. During the course of the pilot study, the revised pilot questionnaire was modified slightly two times to determine how different formats and questions worked. A second version of the revised pilot questionnaire was tested on six of the last respondents, and a third version was tested on the final three respondents in the pilot study. The changes made to the second and third versions of the revised pilot questionnaire are described below.

Version two of the revised pilot questionnaire

The changes made to the second version of the revised pilot questionnaire involved using three closed-ended questions to determine what practices parents were using to decrease fat during food preparation, or when buying foods, and if they were limiting or excluding any foods because of fat. This second version was used on six respondents.

The decision to use a closed-ended format to determine the practices respondents were using to lower fat was based on the interviewers' experiences during the interviews. Parents indicated that they were doing things to lower fat and mentioned preparing lower-fat meals but then did not report using many practices to lower fat in response to the open-ended questions. After the first version of the revised pilot questionnaire had been used with 59 respondents, the interviewers felt that respondents might not be mentioning all the practices they normally use, because they have been using them for such a long time that they are part of a routine.

A closed-ended format is beneficial because it assures that all respondents provide information on all practices of interest. However, there is the concern that with a closed-ended format that parents may notice the strong focus on lowering fat and respond that they use more practices than they actually do because they think they should. Even though there is the potential for respondents to provide socially desirable answers, a closed-ended format was used to determine if it would be more effective than the open-ended format in eliciting the practices respondents were using.

To determine what lower-fat practices respondents were using during food preparation, parents were read a list of 12 practices and asked if they usually used each practice when preparing meals for their family and if they did anything differently for their preschool child. These practices were similar to those included as precoded categories in the open-ended question used in the first version of the revised pilot questionnaire (question 15, Appendix H).

To determine if they used any food limitation or exclusion practices, parents were given a list of 10 higher-fat foods often consumed by preschoolers and asked if they did not buy these foods or limited their consumption because of fat content. The 10 foods listed to parents were similar to foods included as precoded categories in the open-

ended question in the first version of the revised pilot questionnaire (question 17, Appendix H).

To determine if they purchased lower-fat and specially manufactured lower-fat foods, parents were asked if they bought any of 12 of these types of foods. Parents were also asked if they check the label for fat content before buying a food or if they avoid buying higher-fat snacks. The foods listed are similar to foods included as precoded categories in the open-ended question in the first version of the revised pilot questionnaire (question 19, Appendix H).

Version three of the revised pilot questionnaire

A few changes were made to the revised pilot questionnaire before it was administered to three remaining respondents. Several of the potential concerns were deleted from the list of concerns (question 12, Appendix H) because the interviewers felt the list was long and that very few respondents had indicated concern with several of them. The concerns that were deleted include "dawdles at meals," "doesn't drink enough milk," "eats too much salt," and "doesn't eat enough meat."

The second change was to the order of the questions asked to determine practices used to lower fat. After the first version of the revised pilot questionnaire was tested, interviewers felt that preparing and buying foods were conceptually related as they are more likely done for the whole family, while limiting or excluding foods may be a different concept, as parents might do this specifically for their preschooler. Interviewers felt that the questionnaire would flow better if respondents were asked about practices used during food preparation, then about buying foods, and finally about limiting or excluding certain foods because of fat, rather than the previous order of preparing foods, limiting or excluding foods, and buying foods. The change in order as described above was subsequently used in the third version of the pilot questionnaire, and the questions were again asked in an open-ended format.

Another change was adding a question to determine if the practices used to lower fat were done for the family as a whole or just for the preschooler. During the implementation of the first version of the revised pilot questionnaire (Appendix H), interviewers felt that parents were preparing meals and buying foods for the family as a whole rather than doing specific things for the preschool child. In the new question, after parents were asked if they were limiting or excluding any foods to lower fat, they were asked if what they are doing for their preschool child is generally the same as for the rest of the family. If parents indicated that they do something differently for their preschooler, then they were asked what was different.

Another change was to determine parents' awareness and knowledge of adult guidelines with the use of different questions. After the first version of the revised pilot questionnaire was implemented, interviewers commented that respondents were responding to the question about what the fat guidelines say and what they had heard about the type and amount of fat adults should be eating, although the response was not extensive. Since both questions were eliciting a response the two questions were combined to read "Are you aware of any guidelines or information that talks about the amount and type of fat adults should be eating?"

A small change was also made to questions designed to determine awareness and knowledge of fat guidelines for children. After experience with the first version of the pilot questionnaire, interviewers commented that some parents had mentioned reading an article in a parenting magazine about fat and preschoolers. Despite reading this article, these parents had limited responses when asked about fat guidelines for children or information on including fat in the eating pattern of preschool children. To determine if asking about sources of nutrition information first, and then about awareness and knowledge about fat guidelines for children second, would elicit more lengthy responses, the order of these two questions was reversed. Respondents were first asked what

sources of nutrition information they use when feeding their preschoolers and second if they have seen anything about fat and feeding preschoolers, If parents responded yes, they were then asked what they had heard.

In addition, based on the preliminary results from the initial 59 responses and the interviewers experience over the phone, it appeared that several of the belief statements were not clear to respondents. Changes to belief statements were made to improve clarity. The comparison of children eating the same as adults in two of the belief statements was removed as were extreme words such as "never," "really," "as much as possible," and "no place."

5.4.6.4 Interviewer monitoring

One of the main advantages of conducting a pilot study is that any difficulties experienced by or with interviewers can be corrected early on. After each interviewer had administered three interviews they discussed how the questionnaire was going and any problems or concerns that arose. To standardize procedures across interviewers, the researcher collected a portion of the completed interviews from each interviewer and reviewed them for completeness of answers, missing data, and verification that interviewers were calling at various times of the day and on different days of week, including weekends. Any problems found were immediately discussed with the interviewer. From this point forward the author was in contact with the interviewers on a regular basis to check on the progress of the interviews.

In order to check for standardization across interviewers each interviewer was to tape record several interviews. This would allow the researcher to verify that all interviewers were reading and recording responses in the same manner. This is important as recording answers is done independently by interviewers. During the course of an interview, the interviewer will hear a response and must decide how it should be recorded. Interviewers have the option of circling responses or hand

recording responses that do not fit into precoded categories. It is important to know that all interviewers are recording what they hear in a consistent manner.

The three interviewers attempted to tape record several interviews with phone attachments supplied by the researcher. Unfortunately the recording devices were not compatible with certain types of phones or with cordless phones. The author administered the majority of her interviews at the University of Manitoba and was able to successfully record several interviews with the telephone adapter. It appears that the adapter is only compatible with certain phones and therefore the two other interviewers were not able to record any of their interviews.

Another telephone adapter was tested at a later time, and it did work successfully on any type of phone. The adapter was easy to use, although an interviewer must be aware of the device in their ear and be careful not to knock the cord out of their ear when moving. In the final study, each interviewer will be instructed to tape one day of interviews. The tapes would then be reviewed to assure that all interviews are being administered and coded consistently.

Approval to tape record interviews was obtained from the Ethics Review Committee, Faculty of Human Ecology. For the final study respondents will be asked if they would be willing to participate either with or without tape-recording the conversation. The recommended change in wording for the introduction to the questionnaire appears in capital letters as follows:

"Your participation is voluntary. You can refuse to answer any question or stop the interview at any time. Your answers will be kept strictly confidential. **IN ORDER TO RECORD ACCURATELY, WE REQUEST YOUR PERMISSION TO TAPE OUR CONVERSATION. THE TAPE WILL BE ERASED AFTER THE STUDY. Are you willing to participate EITHER WITH OR WITHOUT RECORDING OUR CONVERSATION?"**

Yes, with tape recording1

Yes, without tape recording2

No, refuse to participate3

5.4.6.5 Data entry

An experienced person was hired to enter the raw data from the original questionnaires and to create SAS data files for analysis using SAS software, version 8 (SAS Institute, 2000). To ensure that the data were entered correctly, the data from each questionnaire was entered twice. The researcher also selected five questionnaires at random to check for accuracy by comparing the data from the original questionnaire with the information in the SAS file.

5.4.6.6 Data analysis

Data was analyzed using programs available in SAS software, version 8 (SAS Institute, 2000). Descriptive data, factor analysis, and Cronbach's alpha were generated as appropriate.

5.4.7 Results and discussion of pilot study and recommendations for final study

5.4.7.1 Procedure for training interviewers

The training procedures appeared effective in preparing the interviewers to conduct the interviews efficiently. After reviewing the results, a few issues emerged that require further consideration for the final study.

The format for the majority of questions in the final study is to be open-ended as it was in the pilot study. The final study will be different, however, as only a few precoded categories will appear for the question pertaining to practices used to lower fat. Instead of interviewers circling precoded categories as appropriate, they will record responses from respondents for the questions pertaining to practices to lower fat and the

questions about knowledge of fat recommendations for adults and children, which will be coded later by the researcher.

Interviewers will be trained to record answers as precisely as possible in the area of the questionnaire where they are mentioned by respondents. Training interviewers not to erase and move responses became an important issue during the pilot study, especially when respondents were asked about the practices they used to lower fat. During the pilot study, interviewers occasionally erased and moved respondents' answers from one area of practices used to another. For example, if a respondent mentioned that they do not give their child potato chips in response to what they do to decrease fat during preparation, the interviewers may have circled "potato chips" under limiting or excluding foods, as that is where potato chips appeared as a precoded category, instead of hand recording "potato chips" as a response to the preparation question. It is important to ensure that interviewers are recording responses where they are mentioned, as the researcher is interested in which questions elicit what responses from respondents.

Training should also focus on a consistent level of probing across interviewers. For example, in the questions regarding practices used to lower fat, interviewers should use the respondents' words in order to probe for more examples of things they do. For example, if a respondent mentions buying light mayonnaise, the interviewer should probe for more examples of similar things bought. Interviewers would use the statement "You just mentioned you buy light mayonnaise, are there any other foods you buy like this to reduce fat?" To ensure that all interviewers probe consistently, the probes interviewers should use to get these more complete answers will be included on the questionnaire itself.

During the interviews it was discovered that some respondents had not received the letter sent out introducing the study. When this happens, if the respondent indicates

they would like a summary of the results or pamphlets from Manitoba Milk Producers at the end of the interview, the interviewer must remember to verify that the address appearing on the main list is correct. The final questionnaire was revised to include a note at the end of the questions stating that interviewers should return to the second page of the interview and check to see if the respondent had received the letter. If they did not, then the interviewer will ask for their new address and record it on the calling sheet.

In the pilot study, interviews were administered to two participants with a language barrier and one whose child had an undiagnosed allergy. Because these participants were willing to participate, the interviews were administered. Two of these interviews were later excluded from analysis, as the interviewer felt the language barrier affected the data collected. Interviewers should continue to conduct interviews with willing participants even if they are unsure of language barriers or reported diets or allergies, but they must also make a note at the end of the interview indicating any issues with the quality of the interview and whether it should be included in the analysis.

5.4.7.2 Implementation of the pilot study

Overall the implementation of the study went very smoothly. The main issue which arose was the large number of respondents who did not have available telephone numbers and therefore could not be contacted. This is an important issue and will be discussed in detail below. The introductory letter (Appendix J) worked very well, as many people seemed to appreciate the letter and some were looking forward to the call. Interviewers felt the responses to frequently asked questions worked well and that respondents were satisfied with the answers. The most commonly asked questions at the beginning of the questionnaire were how their name was selected and what the purpose of the study was.

The flow and length of the questionnaire seemed appropriate. Some interviews took longer than 15 minutes but respondents did not seem to mind. Respondents seemed very receptive and assured by the debriefing at the end of the study about Health Canada's current recommendations for including fat in preschool children's diets. Many respondents took the opportunity to ask questions of the interviewer about feeding preschool children in general. There was a high interest in receiving a copy of the results of the study and pamphlets about feeding children.

5.4.7.3 Procedure of data entry

To ensure the data were entered correctly, the researcher randomly selected five questionnaires to check data from the original questionnaire against the data file. All five questionnaires selected were correctly entered into the data file. The person hired to enter the data was asked for any suggestions or comments about the coding or process of data entry. She did not have any comments and felt the coding was rather straightforward.

5.4.7.4 Procedure of data analysis

Although the data analysis conducted during the pilot study was largely descriptive, the factor analysis and Cronbach's coefficient alpha were more complicated statistical procedures to generate. The SAS software, version 8 (SAS Institute, 2000) met all the needs for analysis of information from the pilot study, and can easily meet the more complicated statistical procedures that will be conducted on data collected in the final study.

5.4.7.5 Response rate

One hundred and fifty letters were mailed to a random sample of parents selected from the Manitoba Health Database. Table 4 shows that 73 of the 150 potential participants sent letters could not be contacted. Five letters were non-deliverable because the family had moved and telephone numbers could not be found for these five.

In total, telephone numbers could not be found for 65 parents. Interviewers were unable to make contact with eight respondents after attempting to reach them eight times.

Table 4. Response rate (n=150).

Potential participants contacted/not contacted	Number	%
<u>No contact</u>		
-letters returned, family moved	5	
-no telephone number	46	
-telephone disconnected/wrong number-no new number	14	
	<hr/> 65	43%
<u>Unresolved (with telephone numbers)</u>		
-no answer after 8 calling attempts	8	5%
<u>Contact (with telephone numbers)</u>		
<i>Contact (interview not used)</i>		
-respondent refused to participate	5	
-excluded as language problems	1	
-excluded as ineligible due to age of child	1	
-agree to participate-reject completed questionnaire due to language problems	<hr/> 2	
	9	
<i>Contact (interview used)</i>		
-agree to participate in 1 st draft of questionnaire	59	
-agree to participate in 2 nd draft of questionnaire	6	
-agree to participate in 3 rd draft of questionnaire	3	
	<hr/> 68	
TOTAL CONTACTED	<hr/> 77	51%

Seventy-seven potential participants were contacted by telephone. Of these 77, five refused to participate but only two of these answered the non-responder demographic questionnaire. The three who refused hung up almost immediately and therefore did not complete the non-responder questionnaire. One person had a language difficulty and indicated they would prefer not to participate. Another potential participant was excluded because her child was four years old. Because the sample

was drawn to include children between the ages of 2 and 3 as of March 1, 2000, by the time the calls were made in April 2000, a small number of children had turned four. This parent would have participated but was excluded because her child had turned four. Finally, two of the completed questionnaires were later excluded due to language difficulties.

Sixty-eight respondents did complete one of the three versions of the revised pilot questionnaire. The overall response rate was 88% based on the number of completed questionnaires divided by those contacted (68/77). Dillman (1978) reports response rates of telephone surveys of the general public average about 85%, with a range of 73% to 92%. Therefore it appears that the 88% response rate obtained falls into the normal range of telephone surveys of the general public.

As described in section 5.4.4.1 above the process of locating phone numbers was difficult, especially for the rural respondents. Considering that there is such a large "no contact" group due to a lack of available telephone numbers, it seemed important to determine if there was more of a problem locating Winnipeg or rural phone numbers or certain kinds of rural addresses. The addresses provided for those living in rural areas can be street numbers, box numbers, rural route numbers, or general delivery.

The person hired to locate the phone numbers was able to successfully find 85 active or correct phone numbers. The 85 numbers includes the 77 who were contacted by phone plus the eight in the "unresolved" category (no response after eight call-backs). Telephone numbers could not be found for sixty-five names, including numbers that were disconnected or were wrong numbers.

Table 5 illustrates the number of phone numbers found that led to the correct person, out of the 150 names on the list. Eighty-three of the 150 names on the list were from Winnipeg. Of those 83 names, correct phone numbers were found for 48 (58%).

The remaining 67 names on the list had a rural address. Of the 67 rural addresses on the list, correct phone numbers were found for 37 (55%).

Table 5. Percentage of telephone numbers found for Winnipeg and rural areas.

Location of respondent	Number	%
Winnipeg (n=83)	48	58%
Rural (n=67)	37	55%

The percentage of telephone numbers that led to contacting the correct person for Winnipeg names (58%) and rural names (55%) appear very similar; therefore, it does not appear that there was a difference in the success of finding Winnipeg versus rural phone numbers overall.

Table 6 illustrates the number of telephone numbers found by the person hired to find phone numbers that led to the correct person for rural names based on the type of address provided on the list. Rural addresses are listed as street numbers, box numbers, rural route numbers, general delivery or both a box number and rural route number. Sixty-seven percent of addresses that were a street number or a rural route number were found and fifty-six percent of box numbers were found. It appears that it was most difficult to find telephone numbers for those whose only address was listed as general delivery, although only a small number of telephone numbers found had a general delivery address. As table 6 shows telephone numbers could be found for 67% of rural address with a street number compared to 50% (25/49) of addresses that were listed as a box or rural route number, box number plus a rural route number, or as general delivery. This shows that for rural addresses, it is easier to find telephone numbers if the address available is a street address versus a box number, rural route number, box number plus a rural route number or general delivery.

Table 6. Percentage of telephone numbers found for rural areas based on type of address provided.

Type of rural address	Number	Percentage
-street number (n=18)	12	67%
-box number (n=34)	19	56%
-rural route number (n=3)	2	67%
-box number plus rural route number (n=6)	3	50%
-general delivery (n=6)	1	17%

When comparing the success of finding Winnipeg phone numbers (Table 5) with rural phone numbers (Table 6) that are listed as a street address, it was easier to locate phone numbers for rural street addresses (58% and 67%, respectively). The reasons for the difficulty finding phone numbers for those who live in Winnipeg and rural areas were different as well. The difficulty finding phone numbers for those in Winnipeg is likely a reflection of a more mobile population. It is difficult to find phone numbers for those in rural areas as addresses are often listed as box numbers, rural route addresses, or as general delivery.

It is important to determine whether those who refused to answer the questionnaire differed from those who completed the questionnaire. During the interviews, five respondents refused to complete the questionnaire. The reason for refusal for two of the respondents was that they were too busy. An attempt to persuade these two respondents was made by reassuring them that the questionnaire did not take long and that it was important to talk to everyone. They still declined to answer the questionnaire but were willing to answer the non-responder questionnaire which provided information on the respondent's age, marital status, number of children, education level of respondent and family income (Appendix K). Since information is only

available on two of the five respondents who refused, the responders and the non-responders were not compared.

5.4.7.5.1 Discussion

As Table 4 shows, no contact was made with sixty-five people from the list of 150 (43%) either because they had moved, no telephone number could be found, their telephone number was a wrong number, or it had been disconnected and another listing was not found. Using the Manitoba Health Database as a sampling frame may be a limitation as it may be out-of-date for people who have moved. In order for Manitoba Health to have a new address, residents who move must fill out the change of address form on the back of their health card and mail it to Manitoba Health. Addresses can also be changed at a doctor's office.

Although there are limitations to using the Manitoba Health Database, it is still a convenient way to locate a large segment of people with preschool children. Since those who could not be contacted cannot be traced, it is not possible to determine if they differ from those contacted on important study variables.

Another option would be to try to recruit parents through day care centres. As discussed previously in the results of focus groups (section 5.1.4), there was a low response to recruitment efforts made at day care centres. Also, recruiting parents from day-care centres would mean only parents whose children are in day care centres and who are interested in participating would be represented (Campbell, 1991).

Another way to select a telephone sample is through random-digit dialing. This method uses a computer to select the numbers to be called. To obtain numbers from across the province of Manitoba, the computer's choices would be stratified on the basis of only including Manitoba's areas code and then the three digit local exchanges (Baker, 1988). The interviewer would then determine if the household has a preschooler present and the interview would carry on. Obviously there are disadvantages to this method.

The interviewer's calling time is greatly increased, and it would not be possible to send out an introductory letter explaining the study. The introductory letter has been shown to increase the response rate (Dillman, 1978).

To ensure that the final questionnaire to be used in the final study is appropriate for use with all parents of preschoolers in Manitoba it is important to test the questionnaire on a broad range of people that are representative of this population as a whole. One disadvantage of using the Manitoba Health Database as the sampling frame was that telephone numbers could not be located for a large number of people from the sample. Since data about the no contact group were unavailable, there was no way to determine if the parents that could not be contacted were different from those who were contacted.

Alternatively, it was possible to compare the parents in the pilot sample to all parents with preschoolers in Manitoba to determine if they were similar. For this comparison, all respondents who participated in the first, second and third version of the revised pilot questionnaire (n=68) were compared to Manitoba statistics (Table 7). Unfortunately, specific demographic information on Manitoba families with preschoolers could not be provided from Statistics Canada or Vital Statistics in Winnipeg. Instead, the educational attainment of mothers and fathers in the present study was compared to educational attainment for Manitobans aged 25 to 54 (Statistics Canada, 1999), as shown in Table 7. Employment status of mothers was compared to provincial information regarding employment status of Manitoba mothers with preschool children (Table 7) (Statistics Canada, 1996). Employment status of fathers was compared to employment status for the population of Manitoba males aged 25 to 44 (Statistics Canada, 1996). Information on Manitoba families categorized by income brackets could

Table 7. Socio-economic characteristics of respondents (n=68) compared to Statistics Canada data on Manitoba families.

Socio-economic variables	Respondents			Statistics Canada information Manitoba families
	Total group (n=68)	Not concerned group (n=53)	Concerned group (n=15)	
	% (n)	% (n)	% (n)	1998 ⁽¹⁾ %
Mothers' education level				
-less than high school	4 (3)	6 (3)	0	18
-high school graduate	51 (35)	45 (24)	73 (11)	31
-college and trade graduate	22 (15)	23 (12)	20 (3)	29
-university degree	21 (14)	25 (13)	7 (1)	22
-foreign education	1(1)	2 (1)		
Fathers' education level n=63 ⁽²⁾				1998 ⁽³⁾ %
-less than high school	6 (4)	8 (4)	0	23
-high school graduate	51 (32)	45 (22)	64 (9)	28
-college and trade graduate	16 (10)	18 (9)	14 (2)	27
-university degree	24 (15)	27 (13)	14 (2)	22
-foreign education	1.5 (1)	2 (1)	0	0
-don't know	1.5 (1)	0	7 (1)	0
Mothers' employment status				1996 ⁽⁴⁾ %
-full-time (30+ hours/week)	21 (14)	23 (12)	13 (2)	23
-part-time (<30 hours/week)	34 (23)	32 (17)	40 (6)	15
-not employed	41 (28)	42 (22)	40 (6)	62
-other (students, maternity leave)	4 (3)	4 (2)	7 (1)	0

Table 7 (Con't). Socio-economic characteristics of respondents (n=68) compared to Statistics Canada data on Manitoba families.

Socio-economic variables	Respondents			Statistics Canada information Manitoba families
	Total group (n=68)	Not concerned group (n=53)	Concerned group (n=15)	
Fathers employment status n=63 ⁽²⁾				1998 ⁽⁵⁾ %
-full-time (30+ hours/week)	90 (57) % (n)	92 (45) % (n)	86 (12) % (n)	83
-part-time (<30 hours/week)	2 (1)	0	7 (1)	5
-not employed	2 (1)	2 (1)	0	12
-other (self-employed)	6 (4)	6 (3)	7 (1)	0
Annual income				1997 ⁽⁶⁾
-under \$35,000	24 (16)	25 (13)	20 (3)	
-between \$35,000 and \$55,000	32 (22)	32 (17)	33 (5)	\$58,390
-over \$55,000	31 (21)	30 (16)	33 (5)	
Don't know	6 (4)	7 (4)	0	
No response	7 (5)	6 (3)	13 (2)	
Rural/Urban status				2000 ⁽⁷⁾
-Rural	28 (19)	32 (17)	13 (2)	
-Brandon	6 (4)	6 (3)	7 (1)	37% ⁽⁸⁾
-Winnipeg	66 (45)	62 (33)	80 (12)	63%

Notes: ⁽¹⁾ % of Manitoba female population aged 25 to 54 by highest completed education (Statistics Canada, 1999)

⁽²⁾ Five are not applicable (mother is single parent)

⁽³⁾ % of Manitoba male population aged 25 to 54 by highest completed education (Statistics Canada, 1999)

⁽⁴⁾ % of Manitoba females with pre-school age children in labour force (Statistics Canada, 1996)

⁽⁵⁾ % of Manitoba males between the ages of 25-44 years (Statistics Canada, 1996)

⁽⁶⁾ Average income of husband-wife families with children in Manitoba (Statistics Canada, 1997)

⁽⁷⁾ % of Manitoba population 15 years and over living in Winnipeg and non-Winnipeg Manitoba (Statistics Canada, 2000).

⁽⁸⁾ Includes Manitoba population 15 years and over living in all areas of Manitoba excluding Winnipeg (Statistics Canada, 2000).

not be found. Instead information for average income for all husband-wife families with children in Manitoba was used (Statistics Canada, 1997).

As Table 7 shows the percentage of mothers from this study who have a high school education or less (55%), or who are college or trade school graduates or have university degrees (43%), appears to be similar to 1998 information for all females in Manitoba between the ages of 25 and 54 (49% and 51%, respectively) (Statistics Canada, 1999). It is important to note however that the comparison group based on Statistics Canada information is not exactly the same as the study population. The Statistics Canada comparison group includes all Manitoba females between the ages of 25 and 54, but does not distinguish by women of different age categories or by the presence of children. All women in the present study have children and most are under 40 years of age (93%), which is different from the comparison group.

As with mothers, it appears that the percentage of fathers from this study who have a high school education or less (57%), or who have graduated from college or trade school or who have a university degree (40%) are similar to 1998 information for all males in Manitoba between the ages of 25 and 54 (51% and 49%, respectively) (Statistics Canada, 1999). Again, however, it is important to note that the target group used by Statistics Canada differs from the study population. As with the mothers, the Statistics Canada group includes all Manitoba males between the ages of 25 and 54 but does not distinguish between different age categories or by those with children.

Forty-one percent of mothers were not employed outside of the home, while 21% worked full time and 34% worked part time (Table 7). According to 1996 Statistics Canada data, 62% of Manitoba women with preschool age children under the age of six do not work outside of the home, while 23% work full time and 15% work part time (Statistics Canada, 1996). Based on the preliminary results, it appears that more mothers in the current study work compared to the population of Manitoba women with

preschool age children under the age of six in 1996. It is important to note however that the comparison group based on Statistics Canada information is different than the current study group. The mothers in the comparison group have children under the age of six, while the children in the current study group are two and three years old. As well, the Statistics Canada information is four years old and is based on 1996 labour force statistics.

Ninety-two percent of fathers in this study were employed full-time or part-time. This is similar to 1996 statistics for Manitoba males between the ages of 25 and 44 years, of whom 88% worked part time or full time (Statistics Canada, 1996). Two percent of fathers in this study were not employed which is less than the 1996 statistics for Manitoba males between the ages of 25 and 44 years, of whom 12% were not employed (Statistics Canada, 1996).

Eighty-seven percent (n=59) of respondents answered the question relating to income. Of the nine who gave no answer, four did not know their income and five refused to answer. Thirty-six percent (n=21) of the 59 people who answered the income question earned over \$55,000 before taxes, 27% (n=16) earned under \$35,000, and 37% (n=22) earned between \$35,000 and \$55,000. The average family income of all husband and wife families in Manitoba in 1997 was \$58,390 (Statistics Canada, 1997) which means that 50% earned more than \$58,390 and 50% earned less than \$58,390. Therefore it appears that respondents' in this study may earn less than the average 1997 family income of all husband and wife families in Manitoba as only 36% of respondents earned over \$55,000. However, it is important to consider that the question used to derive the average family income of all husband and wife families in Manitoba was different than the question used during the present study. Statistics Canada collected the information through in-person interviews where the person was asked to record their income from 25 sources while referring to their 1997 tax forms. Because the

methods used were different it is uncertain if the differences mean that the income data from the pilot study is less valid. As well, it is important to note that the 1997 Statistics Canada income is for husband and wife families with children and does not include single parent families. Therefore the comparison group is not precisely the same as the respondents in the present study.

The percentage of parents in this study who are from Winnipeg (66%) or who are from the rest of Manitoba including Brandon and rural Manitoba (34%) are similar to 2000 information for the Manitoba population of residents 15 years and over (63% and 37%, respectively) (Statistics Canada, 2000). However, the Statistics Canada data differs from the study group in that it does not divide the population of Manitoba by age categories or by the presence of children but instead includes all Manitoba residents aged 15 and older.

5.4.7.5.2 Recommendations for final study

For the pilot study all 150 names selected were mailed an introductory letter. It is less costly to first locate the phone number and then mail a letter to only those respondents for whom you have a phone number. Due to time constraints for the completion of the pilot study, the telephone numbers were not located first. For the final study the phone number will be located first and then letters will be mailed out to those from the list for which a phone number could be found.

For the pilot study we were able to locate numbers for 85 of the respondents out of the list of 150. Of the 85, 68 respondents completed the questionnaire, eight were considered a "no contact" after eight call-backs, five refused to participate in the study, and four were excluded. Although eight respondents were considered a "no contact" after eight call-backs, interviewers were confident that the telephone numbers for these eight were correct phone numbers. Interviewers either had spoken to the respondent or were told to call back, but were never able to reach them again or an answering machine

picked up the call and the voice message indicated the respondent's name, which matched the list of names. Sixty-eight of the 85 people completed the questionnaire. This information is useful in determining how many letters will need to be mailed to have 500 completed questionnaires in the final study.

The non-responder questionnaire worked well for the two respondents who agreed to answer it. They both answered all of the questions without difficulty. Because the non-responder questionnaire worked well, there are no changes recommended. The importance of obtaining the non-responder demographic information will be stressed to interviewers during training and more emphasis will be placed in training on how to succeed in obtaining the non-responder questionnaire.

Previous research conducted by Trumble-Waddell et al. (1998) was consulted to determine the number of names that would need to be sampled in order to obtain a sample size of 30 for the pilot study. Trumble-Waddell et al. (1998) also used the Manitoba Health Database to draw a random sample of preschool age children. Based on the findings from the study by Trumble-Waddell et al. (1998), a four to one ratio was used to calculate the number of respondents required to have a final sample size of 30 for the pilot study. One hundred and fifty respondents were mailed an introductory letter, which would ensure a sample of 30 completed questionnaires. Considerably more respondents participated in the study ($n=68$) than was predicted based on data from the previous research by Trumble-Waddell, et al. (1998). The reason for the high response rate in the present study was likely due to the shorter time commitment (15 minutes) required of the respondents in this study compared to that conducted by Trumble-Waddell, et al. (1998). The respondents in that study were required to complete two, three-day food records and also had the researcher visit them in their homes, obviously a much larger time commitment and a more invasive procedure.

5.4.7.6 Demographic characteristics

The demographic characteristics of parents and children appear in Table 8. The analysis for the variables mothers' and fathers' education level, mothers' and fathers' employment status, annual income and rural/urban status was completed on the sample of 68 parents who participated in the first, second, and third versions of the pilot questionnaire. The analysis of the remaining variables was completed on the sample of 59 parents (57 mothers and 2 fathers) who participated in the first version of the revised pilot questionnaire (Appendix H).

Table 8 shows that 55% of mothers were high school graduates (n=35) or had less than high school (n=3), while 43% had a college or trade degree (n=15) or a university degree (n=14). Comparing mothers' education for respondents in the concerned and not concerned groups (Table 8), there may be a trend for mothers with higher levels of education (48% with college, trade school or university degree) to be less concerned about their preschooler eating too much fat than those who are concerned (27% with this level of education). Mothers with lower education levels (high school degree or less) may be more concerned about their preschooler eating too much fat than those who are not concerned (73% vs. 51% for the not concerned group). The number of respondents in the concerned about fat group was small (n=15) therefore results are interpreted with caution.

Fifty-seven percent of fathers were high school graduates (n=32) or had less than high school (n=4), while 40% had either a college or trade degree (n=10) or a university degree (n=15) (Table 8). As with the mothers, there may be a possible trend for fathers from the not concerned group to have higher levels of education (45% with college, trade school or university education) than the concerned group (28% with this education level) and fathers with lower education levels (high school degree or less) to be more concerned about their preschooler eating too much fat than those who are not

Table 8. Demographic characteristics of parents and children.

Variable	Total group	Not concerned group	Concerned group
	% (n)	% (n)	% (n)
Mothers' education level ⁽¹⁾			
-less than high school	4 (3)	6 (3)	0
-high school graduate	51 (35)	45 (24)	73 (11)
-college and trade graduate	22 (15)	23 (12)	20 (3)
-university degree	21 (14)	25 (13)	7 (1)
-foreign education	1 (1)	2 (1)	0
Fathers' education level ^(1 and 2)			
-less than high school	6 (4)	8 (4)	0
-high school graduate	51 (32)	45 (22)	64 (9)
-college and trade graduate	16 (10)	18 (9)	14 (2)
-university degree	24 (15)	27 (13)	14 (2)
-foreign education	1.5 (1)	2 (1)	0
-don't know	1.5 (1)	0	7 (1)
Mothers' employment status ⁽¹⁾			
-full-time (30+ hours/week)	21 (14)	23 (12)	13 (2)
-part-time (<30 hours/week)	34 (23)	32 (17)	40 (6)
-not employed	41 (28)	42 (22)	40 (6)
-other (students, maternity leave)	4 (3)	4 (2)	7 (1)
Fathers' employment status ^(1 and 2)			
-full-time (30+ hours/week)	90 (57)	92 (45)	86 (12)
-part-time (<30 hours/week)	2 (1)	0	7 (1)
-not employed	2 (1)	2 (1)	0
-other (self-employed)	6 (4)	6 (3)	7 (1)
Annual Income ⁽¹⁾			
-under \$35,000	24 (16)	25 (13)	20 (3)
-between \$35,000 and \$55,000	32 (22)	32 (17)	33 (5)
-over \$55,000	31 (21)	30 (16)	33 (5)
-don't know	6 (4)	7 (4)	0
-no response	7 (5)	6 (3)	13 (2)
Rural/Urban status ⁽¹⁾			
-Rural	28 (19)	32 (17)	13 (2)
-Brandon	6 (4)	6 (3)	7 (1)
-Winnipeg	66 (45)	62 (33)	80 (12)
Marital status ⁽³⁾			
-married/partnered	93 (55)	93 (42)	93 (13)
-divorced	5 (3)	7 (3)	0
-never married	2 (1)	0	7 (1)
Mothers age ⁽³⁾			
-20-30 years	29 (17)	29 (13)	29 (4)
-31-40 years	64 (38)	64 (29)	64 (9)
->41 years	7 (4)	7 (3)	7 (1)

Table 8 (Con't). Demographic characteristics of parents and children.

Variable	Total group	Not concerned group	Concerned group
	% (n)	% (n)	% (n)
Fathers age n=55 ^(3 and 4)			
-20-30 years	20 (11)	21 (9)	15 (2)
-31-40 years	64 (35)	64 (27)	62 (8)
->41 years	16 (9)	14 (6)	23 (3)
Parent status n=58 ^(3 and 5)			
-first time parent	26 (15)	30 (13)	14 (2)
-other children	74 (43)	70 (31)	86 (12)
Gender of child ⁽³⁾			
-male	42 (25)	47 (21)	29 (4)
-female	58 (34)	53 (24)	71 (10)
Age of preschool child ⁽³⁾			
-2 years	47 (28)	49 (22)	43 (6)
-3 years	53 (31)	51 (23)	57 (8)
Number of children < 5 years of age n=58 ^(3 and 5)			
-one	50 (29)	55 (24)	36 (5)
-two	36 (21)	32 (14)	50 (7)
-three	14 (8)	14 (6)	14 (2)
Number of children < 18 years of age n=58 ^(3 and 5)			
-one	26 (15)	30 (13)	14 (2)
-two	41 (24)	39 (17)	50 (7)
-3	28 (16)	25 (11)	36 (5)
-4 or more	5 (3)	7 (3)	0
Birth order of child ⁽³⁾			
-first born	43 (25)	43 (19)	43 (6)
-second born	38 (22)	36 (16)	43 (6)
-third born	16 (9)	16 (7)	14 (2)
-born 4 th or over	4 (2)	5 (2)	0

Notes: ⁽¹⁾ Includes respondents who participated in the first, second and third versions of the pilot questionnaire (n=68)

⁽²⁾ Five are not applicable (mother is single parent)

⁽³⁾ Includes respondents who participated in the first version of the pilot question (n=59)

⁽⁴⁾ Four are not applicable (mother is single parent)

⁽⁵⁾ Missing data for one respondent

concerned (64% vs. 53% for the not concerned group). The number of respondents in the concerned about fat group was small (n=15) therefore results are interpreted with caution.

Fifty-five percent of mothers worked either full-time (21%) or part-time (34%), while 41% were not employed outside of the home (Table 8). The percentage of mothers who are employed appears similar between the not concerned and concerned groups (55% and 53%, respectively). Ninety-two percent of fathers in this study were employed full-time (90%) or part-time (2%), while 2% were not employed. The percentage of fathers who are employed appears similar between the not concerned and concerned groups (92% and 93%, respectively).

Thirty-six percent (n=21) of the 59 respondents who answered the income question earned over \$55,000 before taxes, while 27% (n=16) earned under \$35,000 and 37% (n=21) earned between \$35,000 and \$55,000. Of respondents answering the income question (n=59), the percentage of respondents who earned under \$35,000, between \$35,000 and \$55,000 and over \$55,000 appear similar between the concerned group (23%, 38% and 38%) and the not concerned group (28%, 37%, and 35%) (Table 8).

Sixty-six percent (n=45) of respondents were from Winnipeg, while 34% (n=23) live in rural Manitoba or Brandon. Of the 23 respondents living in rural Manitoba or Brandon, it appears that the majority (87%, n=20) are not concerned about fat while only 13% (n=3) are concerned. Of the 45 respondents living in Winnipeg, 73% (n=33) are not concerned about fat, while 26% (n=12) are concerned (Table 8). It appears that there may be a trend for respondents living in Winnipeg to be concerned about fat compared to those living in rural Manitoba or Brandon (26% vs. 13% respectively). However the number of respondents in the concerned group was small (n=15) and therefore results must be interpreted with caution.

Ninety-three percent of the 59 respondents were married or partnered, 64% of the mothers and fathers were between 31-40 years of age, and 26% of respondents

were first time parents. The gender and ages of children were evenly distributed between males and females and two- and three-year olds for the total group.

The not concerned and concerned groups appear similar on many demographic characteristics including: marital status, mothers' and fathers' ages, age of preschool child and the birth order of the preschool child. Based on Table 8 it appears that a larger percentage of the not concerned group were first time parents (30%), and had one child under five years of age (55%) and one child under eighteen years of age (30%) compared to the concerned group (14%, 36%, and 14%, respectively). A larger percentage of the concerned group had a female preschool child (71%), compared to the not concerned group (53%). However the number of respondents in the concerned group was small ($n=14$) and therefore results must be interpreted with caution.

5.4.7.6.1 Implications of the variation in demographic variables for the final study

It is important to ensure that there are enough respondents in each group to allow for the relationships between variables to be properly tested. Table 8 shows that 51% of mothers and fathers were high school graduates. The number of mothers and fathers who had higher education levels (i.e., who are college and trade graduates or who have a university degree) was 43% for mothers and 40% for fathers (Table 8). Very few of the respondents had less than a high school diploma (4% for mothers and 6% for fathers). Assuming that everything remains the same for the final study, an adequate range of educational attainment will be obtained. This will allow relationships between education level and other variables to be tested.

There appears to be adequate variability within the mothers' employment status, which would allow relationships using this variable to be tested. There is little variation in the fathers' employment status, as 90% of fathers were employed full time, which is comparable to Manitoba Statistics on all males between the ages of 25 and 44 years of

age (Statistics Canada, 1996). Once the income categories were collapsed there appeared to be a sufficient number of respondents who earned under \$35,000 (27%), between \$35,000 and \$55,000 (37%), and over \$55,000 (36%).

Sixty-six percent of respondents lived in Winnipeg, 6% lived in Brandon and 28% lived in a small urban centre or rural municipality. The proportion of participants from Winnipeg, Brandon and small urban centres or rural municipalities should be sufficient to test the relationship between rural and urban residence.

The majority of respondents (93%) were married while 7% were either divorced (5%) or never married (2%). It is difficult to predict whether there will be a sufficient number of respondents within the divorced and never married categories in the final study to be able to test the relationship of marital status to other variables.

The majority of mothers and fathers (64%) are between the ages of 31 and 40 years, and 29% of mothers and 20% of fathers are younger (20 to 30 years of age). Sixteen percent of fathers are over 41 years of age while only seven percent of mothers are older. The proportion of mothers and fathers within each age group should be sufficient to test the relationship between younger and older parents.

One quarter of the respondents are first-time parents. This is a variable that is of interest. With the larger numbers for the final study this should provide an adequate number of respondents within the first-time parent status group to test relationships between first-time parents and other variables. There appears to be adequate variability within the gender, age and birth order of the child as well as the number of children in the family that are under five and 18 years of age which will allow relationships to be tested.

5.4.7.6.2 Proposed changes for the final questionnaire

The questions related to mothers' and fathers' age, education, and employment status, marital status, and gender of the preschool child worked well and have sufficient

categories of responses. Therefore these questions will remain the same for the final study.

One change that will need to be made for the final study is in regard to the age of child. As the sample was drawn for the target child to be 24-48 months as of March 1, 2000, the children will be two and a half to four and a half years of age when the final study takes place in the fall of 2000. Therefore the ages of children to be studied will include children up to age four and a half. Adjustments to the introductory letter, the introduction to parents on the telephone and the question on target child's age are recommended (Appendix L).

The major change to the demographic questions relate to the income question. It is recommended that the response categories for the income question be changed to include more higher income categories. Thirty-six percent ($n=21$) of the 59 respondents who answered the income question earned above \$55,000 (Table 8). This is not surprising when we consider that the average family income for all husband and wife families in Manitoba in 1997 was \$58,390 (Statistics Canada, 1997). For the final study, the income question used in the National Population Health Survey (1996) will be used (question 41, Appendix L). This question first screens people into higher and lower incomes and then asks about specific income levels. Using this technique, the higher income respondents do not have to wait to hear all the lower income categories.

5.4.7.7 Parents' concern about various preschool feeding issues

Parents were asked to indicate if they were very concerned, somewhat, or not concerned about 10 issues related to feeding preschool children. Table 9 shows the percentage of parents who were very or somewhat concerned and those who were not concerned about these issues. The number of respondents who indicated they were very concerned was low; therefore, the respondents who indicated they are very concerned or somewhat concerned were combined.

Table 9. Percentage of respondents who were very/somewhat or not concerned about ten nutrition issues (n=59).

Concern	Degree of concern (n=59)	
	Not concerned % (n)	Very or somewhat concerned % (n)
Eats a limited variety of foods	59 (35)	41 (24)
Dawdles at meals	71 (42)	29 (17)
Has a poor appetite	63 (37)	37 (22)
Eats too much fat	76 (45)	24 (14)
Doesn't drink enough milk	75 (44)	25 (15)
Eats too much salt	83 (49)	19 (10)
Eats too much sugar	54 (32)	46 (27)
Doesn't eat enough vegetables	51 (30)	49 (29)
Doesn't eat enough meat	73 (43)	27 (16)
Eats too much junk food	59 (35)	41 (24)
Other	2 (1)	14 (8)

A higher percentage of parents indicated being very or somewhat concerned about too much sugar (46%), too much junk food (41%), not enough vegetables (49%), and not enough variety of foods (41%), than about "too much salt" (19%), "poor appetite" (37%), dawdling at meals (29%), too little milk (25%), too much fat (24%), and not enough meat (27%). Only 24% (n=14), of respondents reported they were very or somewhat concerned about their preschooler eating too much fat. When asked if they had other concerns about feeding their preschoolers that had not been mentioned, a small number of parents mentioned issues such as low fibre, low fruit consumption, and their children being uninterested in food.

It was of interest to know if parents who were concerned about their preschooler eating too much fat were also more concerned about other feeding issues than the not concerned group. Table 10 shows the percentage of respondents who were very concerned or somewhat concerned about nine nutrition issues by their degree of concern about fat. There is a trend for the group that are very or somewhat concerned about fat to also be very or somewhat concerned about other nutrition issues compared

to the group who are not concerned about fat. In particular, the parents who were concerned about too much fat were also twice as likely to be concerned about their preschooler eating too much junk food and not drinking enough milk when compared to the parents who were not concerned about fat.

Table 10. Percentage of respondents who were very or somewhat concerned about nine nutrition issues by their degree of concern about fat.

Concern	Degree of concern about fat	
	Not concerned about fat (n=45) % (n)	Very/somewhat concerned about fat (n=14) % (n)
Eats a limited variety of foods	40 (18)	43 (6)
Dawdles at meals	26 (12)	36 (5)
Has a poor appetite	33 (15)	50 (7)
Doesn't drink enough milk	18 (8)	50 (7)
Eats too much salt	16 (7)	21 (3)
Eats too much sugar	42 (19)	57 (8)
Doesn't eat enough vegetables	49 (22)	50 (7)
Doesn't eat enough meat	24 (11)	36 (5)
Eats too much junk food	33 (15)	64 (9)

5.4.7.7.1 Proposed changes to the question regarding parental concerns

Asking parents to indicate if they were very, somewhat, or not concerned about 10 issues related to feeding preschoolers was effective in determining the percentage of parents who were or were not concerned about their preschooler eating too much fat. Even though few respondents (i.e., less than 29%) were very or somewhat concerned about six of the 10 issues, it is recommended that the final question contain issues that parents are more concerned about as well as those that they are less concerned about. Keeping a mix of issues with different degrees of concern allows fat to be positioned on its importance to parents compared with other issues like sugar and vegetable consumption.

The only nutrition issue that is recommended to be deleted from the question is "dawdles at meals." During the administration of the questionnaire, interviewers noted

that several respondents had difficulty with this concern. These respondents were not sure what the word "dawdles" meant, and therefore the interviewer needed to offer an explanation. It is important that all questions mean the same to all respondents.

Therefore it is recommended that the concern "dawdles at meals" be deleted from the question but that the rest of the question remain the same (Appendix L).

5.4.7.8 Reasons why parents are or are not concerned about their preschool children eating too much fat

In order to determine the reasons why some parents were concerned about their preschool child eating too much fat and others were not, parents were sorted into two groups based on their answer to question 12. Parents who indicated they were very or somewhat concerned about their preschooler eating too much fat were sorted into the concerned group, and those who indicated they were not concerned were sorted into the not concerned group.

5.4.7.8.1 Parental reasons for concern that their preschooler eats too much fat

Twenty-four percent (n=14) of respondents indicated that they were very or somewhat concerned about fat in their preschool child's diet. To determine why these fourteen respondents were concerned they were asked, "What are some of the reasons why you are concerned about that (i.e., eating too much fat)?"

Based on the focus group discussions and literature review, 11 precoded responses were included on the questionnaire along with empty space for interviewers to record other responses. The interviewers circled appropriate responses from precoded categories and wrote down other responses as needed. The responses that did not fit into a precoded category were then grouped together into categories and labeled conceptually. Five new categories were formed on the basis of this grouping. Only four of the 11 precoded answers were mentioned by any of the respondents.

The reasons indicated by parents as to why they were concerned about too much fat in their preschooler's diet appear in Table 11. The most common reasons mentioned by those who were concerned about their preschooler consuming too much fat (n=14) included the family or preschool child liking or eating foods high in fat (36%, n=5), that eating too much fat was unhealthy or bad for health (29%, n=4), that fat was a concern related to cholesterol (21%, n=3) and that eating less fat will prevent overweight later in life (21%, n=3).

Table 11. Parental reasons for concern about their preschooler consuming too much fat (n=14).

Reasons for concern	% (n)
Family/PSC likes/eats foods high in fat	36 (5)
Eating too much fat is unhealthy or bad for health *	29 (4)
Mentions cholesterol	21 (3)
Eating less fat will prevent overweight later in life *	21 (3)
Parents concerned that family/PSC eats too much fat	14 (2)
Concerned with future eating habits	14 (2)
Child is overweight *	14 (2)
Eating less fat will prevent CHD later in life *	7 (1)
High blood pressure	7 (1)
Don't Know	7 (1)

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

Preschool child is abbreviated PSC

Coronary heart disease abbreviated CHD

The following are some of the phrases used by parents which were coded as "family or preschool child likes or eats foods high in fat."

"Preschool child likes to eat lots of meat/sandwich meats."

"Preschool child likes to eat fatty foods and fat on meat and skin on chicken."

"Preschool child loves deep fried-foods (McDonalds and hot dogs) and these are not healthy."

"Family tends to eat fast prepared meals that are higher in fat."

The precoded category "eating too much fat is unhealthy or bad for health" included responses like:

"Increased fat is not healthy."

"Preschooler likes processed foods which are made with hydrogenated oil and are bad for you."

5.4.7.8.2 Parental reasons for not being concerned about preschool child eating too much fat

Seventy-six percent (n=45) of respondents indicated that they were not concerned about their preschooler eating too much fat. To determine why these 45 respondents were not concerned about fat they were asked, "Could you please tell me what some of the reasons are why you, in particular, are not concerned (i.e., about your child eating too much fat)?"

Based on the focus group discussions and literature review, nine precoded responses were included on the questionnaire along with space for interviewers to record other responses. The interviewers circled appropriate responses from precoded categories and wrote down other responses as needed. The other responses that did not fit into a precoded category were then grouped together into categories and labeled conceptually, resulting in eight new categories.

The reasons indicated by parents who were not concerned about too much fat in their preschooler's diet (n=45) appear in Table 12. The most common reasons why parents (n=45) were not concerned about fat in their child's diet was related to their current eating habits. Of those not concerned (n=45), 27% (n=12) indicated that they were not concerned because their preschooler did not eat much fat or high-fat foods, 24% (n=11) indicated that they control, watch, regulate, or are careful about their

preschooler's diet, and 22% (n=10) indicated that they prepare or limit fat and high-fat foods.

Table 12. Parental reasons for not being concerned about their preschooler consuming too much fat (n=45).

Reasons why parents are not concerned about fat	% (n)
Child doesn't eat much fat/high-fat foods	27 (12)
Parents control/watch/regulate/are careful about preschooler's diet	24 (11)
Parent prepares/limits fat and high-fat foods	22 (10)
Family eats a variety of foods/balanced diet	18 (8)
Child isn't allowed much "junk food" *	16 (7)
Preschooler is a good weight and healthy *	16 (7)
Preschooler is active so the amount of fat doesn't matter *	13 (6)
Family eats healthy meals *	11 (5)
Family already eats lower-fat diet *	11 (5)
Eats lots of fruits and vegetables	11 (5)
Preschoolers need some fat	11 (5)
Family eats reasonably well *	9 (4)
Prepares homemade/traditional foods	7 (3)
Preschooler is too thin and doesn't eat enough fat *	4 (2)
Doesn't have a fatty diet	4 (2)
Preschoolers should be eating more fat anyway *	2 (1)

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

Examples of responses by parents which were coded as "child doesn't eat much fat/high-fat foods" included:

"Doesn't eat a lot of fat."

"Child hardly eats cookies, cakes, or pie, candy."

"Eats very few fatty foods."

Responses that were coded as "parents control, watch, regulate, or are careful about preschooler's diet" include the following examples:

"Watch what preschool child eats"

"Conscious about feeding family"

"Careful about what I feed my preschool child"

The category "parent prepares/limits fat and high-fat foods" included responses such as:

"Doesn't give much fat."

"Limit fast foods to once/month."

"Limits french fries."

"Limits convenience foods."

5.4.7.8.3 Proposed changes to the questions on reasons why parents were or were not concerned about their preschool child eating too much fat

The results indicated that the precoded responses for reasons why parents were or were not concerned about fat did not include all the reasons mentioned by parents. In fact, the most common reasons cited by parents for being concerned or not concerned were coded based on new information provided by respondents.

It is suggested for the final questionnaire that precoded categories not appear on the questionnaire but instead that interviewers only hand-record responses (Appendix L). The researcher will then use respondents' words to form suitable categories. This allows for richer data as the respondents' actual words will be used to label the categories instead of trying to fit respondents' answers into our preconceived ideas. This format also reduces the possible coding inconsistencies from one interviewer to the next as interviewers would not be responsible for deciding what responses fit into which categories.

During the pilot study, respondents mentioned a few reasons why they were or were not concerned but not so many that is unfeasible for the interviewer to record what was said. Even though the cost for coding time and interviewer time would be increased, having richer data and categories that are coded based on respondents' words is beneficial.

The results indicate that these questions worked well in determining why some parents are concerned about their children eating too much fat and other parents are not. The data obtained from these questions matches data sought for the research objectives and will be appropriate for the final study.

5.4.7.9 Reported practices used to lower fat during food preparation, while buying foods and when limiting or excluding higher-fat foods

It was of interest to learn if parents were taking action to lower the fat in their preschooler's diets and what types of practices they were using. Respondents were asked if they took action while preparing foods, while buying foods, and when limiting or excluding foods to decrease the amount of fat that their preschooler's ate. If respondents indicated that they were not doing anything then the interviewer skipped to the next question. If the respondent was doing something then they were asked what they were doing. Interviewers were trained not to suggest answers but to probe for more complete answers. Interviewers circled appropriate precoded categories as mentioned and recorded other responses by hand as appropriate.

The results of the pilot study (n=59) will be presented first and the brief findings of the second version of the revised pilot questionnaire which used closed-ended questions to determine practices will be presented after. A description of the changes to the questionnaire based on the findings will follow.

Table 13 shows the percentage of respondents who stated they were doing something during preparation, while buying foods, and when they limit or exclude certain foods to lower the fat their preschooler eats. A majority of respondents indicated that they usually did something during food preparation (85%), when buying foods (69%) and when they limit or exclude foods (71%) to lower the fat their preschoolers ate.

Table 13. Percentage of respondents who reported doing something to lower fat during preparation, while buying foods, and when limiting or excluding foods (n=59).

Practices to lower fat	Percentage of respondents doing something to decrease fat		
	Total group (n=59)	Not concerned group (n=45)	Concerned group (n=14)
	% (n)	% (n)	% (n)
Preparation	85 (50)	87 (39)	79 (11)
Limit or exclude foods	69 (41)	69 (31)	71 (10)
Buying foods	71 (42)	67 (30)	86 (12)

When comparing not concerned respondents who reported doing something during preparation to those who were concerned, slightly more respondents from the not concerned group indicated they were doing something during preparation (87%) than the group who was concerned (79%). The opposite appears to be true for the practice of lowering fat when buying foods, where 86% of the concerned group indicate they use practices when buying foods to lower fat compared to only 67% of the not concerned group. Reported practices to lower fat when limiting or excluding foods appears similar for both groups.

5.4.7.9.1 Reported practices used to lower fat during food preparation

To determine what practices were used during food preparation, the respondents who indicated they were doing something were asked what they were doing during preparation to decrease the amount of fat that their preschooler eats. Table 14 illustrates the practices parents reported using during food preparation to lower fat. The percentages are based on the 50 respondents who indicated they did something during preparation to decrease fat. The percentage of reported practices used by the concerned group and not concerned group also appear in Table 14. Results are reported on the total group (n=50) who indicated they were doing things to lower fat

during preparation.

Table 14. Percentage of respondents who reported using various practices to lower fat during food preparation for those who report taking action (n=50).

Practices used during preparation	Total group (n=50)	Not concerned group (n=39)	Concerned group (n=11)
	% (n)	% (n)	% (n)
Bake or broil foods instead of frying *	36 (18)	41 (16)	18 (2)
Trim fat from meats *	30 (15)	28 (11)	36 (4)
Limit/exclude oil/butter/margarine during preparation	26 (13)	28 (11)	18 (2)
Prepares lower-fat meals	20 (10)	18 (7)	27 (3)
Use nonstick spray/teflon pans instead of frying *	16 (8)	13 (5)	27 (3)
Drain fat from meats *	16 (8)	15 (6)	18 (2)
Remove skin from chicken *	16 (8)	21 (8)	0
Use healthier oils/margarine	16 (8)	15 (6)	18 (2)
Serve vegetables without butter or margarine *	14 (7)	13 (5)	18 (2)
Mention lots of fruits and vegetables	10 (5)	10 (4)	9 (1)
Home cooks meals/no prepackaged foods	6 (3)	5 (2)	9 (1)
Serve muffins/bread without butter or margarine *	6 (3)	5 (2)	9 (1)
Substitutes lower-fat alternative meat choice	6 (3)	3 (1)	18 (2)
Rinse drained meat with water *	4 (2)	5 (2)	0
Replace fat in baking with applesauce *	4 (2)	5 (2)	0
Use paper towels to absorb fat	2 (1)	3 (1)	0
Replace Homo milk/cream with lower-fat milk in baking/cooking *	2 (1)	3 (1)	0
	2 (1)	0	9 (1)
Serve more vegetarian meals *	6 (3)	8 (3)	0

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

Since the question to assess practices used during food preparation was left open-ended there were a variety of responses. Some responses were circled from the precoded categories and others were new information provided by respondents which were grouped into similar categories and labeled conceptually. Respondents indicated

using 18 different practices to lower fat during preparation. Seven of the reported practices were categories that were coded based on new information provided by respondents, while 11 were precoded categories (Table 14).

Of those (n=50) who report taking action during preparation, the most frequently reported practices are baking or broiling foods instead of frying (36%, n=18), trimming fat from meats (30%, n=15), limiting or excluding oil butter or margarine during preparation (26%, n=13), and preparing lower-fat meals (20%, n=10).

"Limiting or excluding oil, butter, or margarine during preparation" was a new category formed based on respondents' comments, such as:

"I don't use butter, margarine or oil."

"I use a small amount of fat while cooking."

"I limit the use of oil."

Examples of respondents' comments which were coded as "Prepare lower-fat meals" include:

"Leaner stuff for whole family."

"Watches fat for whole family...preschool child eats the same."

"Our eating habits are generally low fat."

"I don't make greasy meals".

Even though respondents were asked what they were doing to decrease fat during preparation, 16% mentioned using healthier oils and margarine. This practice does not decrease fat but was mentioned by respondents. Examples of respondents' comments coded as "healthier oils/margarine" include:

"Margarine used more than butter."

"Olive oil or vegetable oil used...doesn't use butter".

The mean number of lower-fat food preparation practices reported by respondents is shown in Table 15. The total group mean is 3 (\pm 1.31). There may be a

possible trend for the not concerned group to report using more practices during preparation (mean score = 3 ± 1.33) compared to the concerned group (mean score = 2 ± 1.19). Caution must be used when comparing the two groups as the number of respondents in the concerned group is small.

Table 15. Mean number of practices reported during food preparation to lower fat and range in the number of reported preparation practices (n=50).

Groups	Mean \pm SD	Range
-Total group (n=50)	3 (1.31)	1-6
-Not concerned group (n=39)	3 (1.33)	1-6
-Concerned group (n=11)	2 (1.19)	1-5

5.4.7.9.2 Reported practices used to lower fat by limiting or excluding foods.

Limiting or excluding certain foods is another strategy cited in the literature as a way to lower fat intake. The goal of this question was to learn if parents used this strategy with their preschool children to lower fat intake. As mentioned previously, parents were first asked if there were any foods they “did not give their preschooler or that they cut down on to decrease fat.” Respondents who indicated that they were limiting or excluding foods to decrease fat were asked which foods they were “cutting down on or cutting out.”

Since this question was left open-ended there were a variety of responses. Some responses were circled from the precoded categories and others were based on new information provided by the respondents, which were later categorized and labeled conceptually.

The reported limitation and exclusion practices used are based on the 41 respondents who indicated doing something. There were 17 different categories of responses to this question. Ten of the response categories were precoded, and the other seven were coded based on respondents' own words (Table 16).

Table 16. Percentage of respondents who reported using various practices to lower fat by limiting or excluding foods for those who report taking action (n=41).

Practices used when limiting/excluding foods	Total group (n=41)	Not concerned group (n=31)	Concerned group (n=10)
	% (n)	% (n)	% (n)
Limits/excludes junk foods	24 (10)	26 (8)	20 (2)
Limits/excludes fast foods *	22 (9)	19 (6)	30 (3)
Limits/excludes chips-potato/corn/taco *	22 (9)	19 (6)	30 (3)
Limits/excludes certain meats/eggs	20 (8)	16 (5)	30 (3)
Limits/excludes margarine/butter *	17 (7)	16 (5)	20 (2)
Limits/excludes chocolate *	15 (6)	19 (6)	0
Substitutes healthier snacks	12 (5)	10 (3)	20 (2)
Limits/excludes hot dogs *	10 (4)	10 (3)	10 (1)
Limits/excludes french fries/hashbrowns *	7 (3)	10 (3)	0
Limits/excludes higher-fat foods	7 (3)	6 (2)	10 (1)
Limits/excludes fried foods	7 (3)	6 (2)	10 (1)
Limits/excludes cheese *	5 (2)	6 (2)	0
Limits/excludes red meat *	5 (2)	6 (2)	0
Limits/excludes pizza pops *	2 (1)	3 (1)	0
Limits/excludes rich sauces/gravy *	2 (1)	2 (1)	0
Limits/excludes desserts	2 (1)	2 (1)	0
Limits/excludes higher-fat/fatty foods	2 (1)	2 (1)	0

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

The most frequent responses reported by those (n=41) who were doing something to lower fat when limiting or excluding foods related to limiting or excluding junk foods (24%, n=10), fast foods (22%, n=9), and chips such as potato, corn, taco (22%, n=9). Examples of phrases used by respondents that were coded as "Limits/excludes junk foods" include:

"Monitor junk food"

"Doesn't expose son to junk foods"

Table 17 illustrates the mean number of practices used when limiting or excluding higher-fat foods reported by respondents. The total group mean is 2 (\pm 1.21). Based on table 17, there does not appear to be a trend for either the not concerned or concerned group to use more practices when limiting or excluding higher-fat foods.

Table 17. Mean number of practices reported to lower fat by limiting or excluding higher-fat foods and range in the number of reported practices (n=41).

Groups	Mean \pm SD	Range
-Total group (n=41)	2 (1.21)	1-6
-Not concerned group (n=31)	2 (1.02)	1-5
-Concerned group (n=10)	2 (1.83)	1-6

5.4.7.9.3 Reported practices used when buying foods to lower fat

It was of interest to learn if parents were buying lower-fat foods or specially manufactured lower-fat foods instead of higher-fat foods to decrease the fat their preschooler was eating. Parents who had indicated that they were doing something when buying foods to lower fat were asked what they were doing.

As with the two previous questions about practices used to decrease fat, this question was left open-ended. Responses were summarized and grouped into similar categories by the researcher. Table 18 shows the practices parents reported using to decrease fat when buying foods. The frequency of response is based on the 42 respondents who indicated they were doing something when buying foods to lower fat.

Of the final 22 categories of responses, 10 were coded based on new information provided by respondents including the most frequent response, reading labels for fat information. Buying lower-fat, healthier snacks and not buying "junk food" were also common responses coded from respondents' answers. Twelve of the precoded categories were mentioned by respondents.

Table 18. Percentage of respondents who reported using various practices to lower fat when buying foods for those who report taking action (n=42).

Practices reported during buying foods	Total group (n=42)	Not concerned group (n=30)	Concerned group (n=12)
	% (n)	% (n)	% (n)
Reads labels for fat information	29 (12)	23 (7)	42 (5)
Buys leaner cuts of meat *	26 (11)	23 (7)	33 (4)
Buys 1% milk *	19 (8)	17 (5)	25 (3)
Buys lean/extra lean beef *	17 (7)	17 (5)	17 (2)
Buys fat reduced yogurt *	17 (7)	10 (3)	33 (4)
Buys lower-fat healthier snacks	17 (7)	10 (3)	33 (4)
Avoids buying junk food	10 (4)	10 (3)	8 (1)
Buys fat reduced dressing/mayonnaise *	12 (5)	7 (2)	25 (3)
Buys fat reduced cheese slices/spread *	10 (4)	7 (2)	17 (2)
Buys lots of fruits and vegetables	10 (4)	13 (4)	0
Buys lower-fat other	7 (3)	3 (1)	17 (2)
Buys 2% milk	7 (3)	7 (2)	8 (1)
Buys fat reduced luncheon meat *	5 (2)	7 (2)	0
Buys skinless chicken	5 (2)	3 (1)	8 (1)
Buys fat reduced peanut butter *	5 (2)	0	17 (2)
Limits higher-fat foods bought	5 (2)	7 (2)	0
Buys lower-fat meat instead luncheon meat	2 (1)	3 (1)	0
Buys skim milk *	2 (1)	3 (1)	0
Buys fat reduced crackers *	2 (1)	3 (1)	0
Buys fat reduced margarine *	2 (1)	0	8 (1)
Buys fat reduced wieners/hot dogs *	2 (1)	3 (1)	0
Buys lower-fat foods (unspecified)	2 (1)	3 (1)	0
Other	5 (2)	3 (1)	8 (1)

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

Of those (n=42) who reported taking action to lower fat while buying foods, the most frequent response was reading labels for fat information which was mentioned by

29% (n=12) of respondents. Examples of responses coded as reading labels for fat information include:

"I look for lower-fat on label."

"I check label for amount of fat."

"...buys light and fat-free items."

Purchasing lower-fat foods such as leaner cuts of meat (26%, n=11), 1% milk (19%, n=8), and lean/extra-lean beef (17%, n=7), fat reduced yogurt (17%, n=7) and buying lower-fat, healthier snacks (17%, n=7) were other responses mentioned by those (n=42) taking action while buying foods.

Examples of phrases used by respondents that were coded as "Buys lower-fat, healthier snacks" include:

"Pretzels/licorice (bought) instead of chips"

"Buys lower-fat granola bars and fruit for snacks"

"Buys low-fat snacks".

The mean number of practices reported to lower fat when buying foods is shown in Table 19. The total group mean is 2 (\pm 1.59). There may be a possible trend for the concerned group to report using more practices when buying foods (mean score = 3 ± 1.86) compared to the not concerned group (mean score = 2 ± 1.30).

Table 19. Mean number of practices reported to lower fat when buying foods and range in the number of reported practices (n=42).

Groups	Mean \pm SD	Range
Total group (n=42)	2 (1.59)	1-7
Not concerned group (n=30)	2 (1.30)	1-6
Concerned group (n=12)	3 (1.86)	1-7

5.4.7.9.4 Results from second version of the revised pilot questionnaire

One of the main benefits of conducting a pilot study is the opportunity to test the flow of and respondent reactions to certain questions to determine what works best. The first version of the revised pilot questionnaire used an open-ended format to elicit practices used to lower fat. When developing the questionnaire, a closed- ended question to elicit practices used by respondents was considered but was not used because experts felt it might elicit socially desirable answers from respondents, who might think they should be using more practices to lower fat.

An open-ended question was finally chosen because the questionnaire already focused on fat and it was important to avoid a social desirability response bias (e.g., respondents might be more inclined to answer positively that they are using many lower-fat practices even though they might not be). It was felt that using an open-ended question would better indicate practices respondents were actually using and which they thought were important enough to mention.

After the first version of the revised pilot questionnaire was tested on 59 respondents, a second version was used on a small group (n=6). This second version was the same as the first except the questions involving practices used to lower fat were asked in a closed-ended format. The decision to use a closed-ended format to determine the practices respondents were using to lower fat was based on the interviewers' experiences while interviewing the first 59 respondents. The interviewers felt that some respondents might not be mentioning all the practices they normally use. A full description of the second version of the questionnaire is described in section 5.4.6.3. Six respondents answered this modified version, five of whom were not concerned about fat and one of whom was concerned.

In order to determine practices respondents used to lower fat, respondents (n=6) were first read a list of practices used during food preparation, when limiting or

excluding certain foods, and when buying foods and were then asked to indicate if they were using each action. As reflected by the mean number of practices used, there may be a trend for these six respondents to report using more practices to lower fat during preparation (mean score=8), when buying foods (mean score=5) and by limiting or excluding foods (mean score=4) in response to the closed-ended questions than respondents who answered the open-ended questions (mean score=3, mean score=2, and mean score=2, respectively). However, only six respondents were asked these closed-ended questions and therefore any trends shown are interpreted with caution.

5.4.7.9.5 Proposed changes to the questions about practices used to lower fat during preparation, while buying foods and when limiting or excluding higher-fat foods

The results show that the open-ended questions elicited a wide range of practices used by respondents to lower fat during preparation, when buying foods and when limiting or excluding certain foods. Substituting healthier snacks, avoiding junk food, reading labels for fat information, and buying lower-fat/healthier snacks were all frequent responses given by parents in response to the open-ended format. These responses were not precoded by the researcher.

Although the second version of the pilot questionnaire was only tested on a small sample of respondents, it appears that the respondents would likely indicate using more practices to lower fat in response to the closed-ended format. The advantage of using a closed-ended question is that all respondents are asked about the same practices; therefore information is available on all practices of interest. This may be useful, as parents might not mention all the practices they use as they have become so routine.

The disadvantage of closed-ended questions is that parents might be sensitive to the questions they are being asked and give socially desirable answers. Asking parents if they use a list of lower-fat practices could cause them to think they should be doing more to lower fat, leading some parents to indicate that they are using more practices

than they actually do. Because the closed-ended question would contain a list of practices which are all focused on decreasing fat, by the end of the questionnaire parents might think they should be using more practices to lower fat for their children, which is certainly not the intent of the study.

Even though parents would be asked if there was anything else they were doing to decrease fat after the closed-ended question was asked, by that time parents may be tired and may not mention other practices they are using. Therefore using closed-ended questions decreases the chance of obtaining other new information about practices parents are using to lower fat. If a closed format had been used several interesting practices used by respondents might not have been discovered, including using healthier oils, reading labels for fat information, and substituting healthy foods. Another disadvantage of the closed-ended question was that it took more time to administer than the open-ended question.

Although their research was on attitude and belief measurement, Fishbein and Ajzen (1975) found that a person's attitude toward an object is primarily determined by no more than five to nine beliefs about that object. These five to nine beliefs are the only ones salient to that individual at a given point in time. Fishbein and Ajzen (1975) propose that a person's beliefs about a given object or action can be elicited in a free-response format by asking him to list the characteristics, qualities, and attributes of the object. It is argued that salient beliefs are elicited first, and beliefs elicited beyond the first nine or 10 are probably not salient for that individual. They also found that when read various statements, a person may agree with a statement even though the belief involved in the statement was not salient to them and would not have been mentioned among their salient beliefs in a free response. Although this previous research involves measuring beliefs and not actions, it suggests that the practices first mentioned by respondents when asked in a free response question might be the most important at a

given point in time. If a person has to think deeply about other actions they perform (past the first five to nine mentioned in free response), these may not be very important to that individual. Therefore a free response format with minimal probing from the interviewer might be the most appropriate way to elicit the most important practices used by respondents.

After weighing the advantages and disadvantages of an open-ended versus a closed-ended question format, it was determined that an open-ended question format would be used to determine practices in the final study. An open-ended question format is beneficial, because it allows the respondents to tell the interviewer what they think is important and avoids the issue of socially desirable responses.

It is recommended that interviewers record the responses to these open-ended questions as free text, with the exception of eight precoded categories that are straightforward for interviewers to code. The researcher will use respondents' actual words to form additional categories and code responses. The eight precoded categories that will appear on the final questionnaire were mentioned frequently during the pilot study and are clear in their meaning. They include five preparation practices and three buying practices. The preparation practices are bake or broil foods instead of frying, trim fat from meat, use nonstick spray or teflon pans, drain fat from meats, and remove skin from chicken. The precoded buying practices are buys leaner cuts of meat, buys 1% milk, and buys lean/extra lean ground beef. These practices are straightforward in their meaning and can be easily coded by interviewers (Appendix L).

The main advantage of using the respondents' actual words to form most categories is that more of what respondents report they are doing will be captured. Although there is no way to know if parents actually do what they report doing, it is less likely that respondents will give socially desirable answers in an open-ended format. The researcher will form categories and code responses based on respondents' own

words rather than trying to fit what they have said into preconceived categories. This format will increase interviewer and coder workload but will provide richer, more descriptive data.

To improve the flow of the questionnaire, it is suggested that the order of the questions to determine practices taken to reduce fat be changed so questions about preparation and buying foods are asked first, followed by questions about limiting or excluding foods. Interviewers felt preparing and buying foods were more related because they are likely to be practices done for the whole family, whereas limiting foods or not giving a food could be done just for the preschooler (Appendix L).

It is also suggested that a slight wording change be made to the question regarding practices used during preparation to decrease fat in the not concerned questionnaire. The question asks, "I'm wondering if there is anything you generally do when preparing foods that would decrease the amount of fat that your preschooler eats?" The words "I'm wondering if there..." are not necessary to the question and should be deleted to make the wording simpler.

The question uses the word "decrease," which may be a problem as it implies a decrease from something done previously. The concern is that parents may have used lower-fat practices for so long that it is not a conscious thing they do to lower fat and the question may not trigger them to think of all the routine things they are doing. It is suggested that a wording like "Is there anything you generally do when preparing foods that makes them lower in fat?" might imply that we are interested in their everyday practices not just recent changes. It is recommended that the word "decrease" in the question, to determine practices used when buying foods be changed to the word "lower" for the same reasons as mentioned above for preparation. It is suggested that the wording be "Next I'd like you to think of buying foods. I'm wondering if there is anything you do when you buy foods to lower the fat that your preschoolers eats?"

A change in wording is recommended for the question on limiting or excluding higher-fat foods. It is recommended that the question “any foods you don’t give your preschooler or that you cut down on to decrease fat” be changed to “any foods you don’t give your preschooler or that you limit because of fat?” This is a minor change but it may be clearer to parents as “limit” is a more common word. The phrase “cut down on” might imply a decrease from a previous time and parents might mention only recent changes they have made, not long standing habits.

It is proposed that an additional question be added to determine parents’ use of substitution as a way to lower fat. Substituting lower-fat foods for higher-fat ones was a practice that was mentioned by respondents during preparation (e.g., substituting lower-fat alternative meat choices for higher-fat ones, replacing fat in baking with applesauce or yogurt, replacing homo milk or cream with lower-fat milk in baking and cooking and serving more vegetarian meals instead of meat), when buying foods (e.g., buying lower-fat healthier snacks), and when limiting or excluding foods (substituting healthier snacks like fruit, yogurt, granola bars, and popcorn for junk foods). Asking parents about their use of substitution as a practice to lower fat should provide interesting information because it appears to be something parents are doing. The recommended wording for the new question is, “When you are choosing foods for your preschooler, do you substitute one food for another to try to reduce fat?” Parents who indicate yes will be asked to give examples of things they are doing.

It is proposed that an additional question be added after the action questions to determine if the foods that are bought and prepared for the preschooler are eaten by the rest of the family as well. During the interviews, several respondents mentioned that they are not doing anything special for their preschool child when preparing meals and buying foods. Parents in the focus groups also indicated that for the most part their preschooler eats the same meals and foods as the rest of the family. Therefore parents

will be asked if what they buy for and serve their preschooler is generally what everyone else in the family eats. If the respondent answers no (rest of the family eats differently) or usually, then a follow-up question that asks what is different would be asked. This provides useful information to determine if preschoolers are eating the same foods and have the same meal patterns as the adults and other children in the family. The recommended question is, "We've been talking about what you do for your preschooler to lower fat. Would you say what you serve your preschooler is generally what everyone else in the family eats or is it different?" If the respondent indicates that the rest of the family eats differently, then the interviewer will ask what is different and will record the response (Appendix L).

The findings indicate that these questions provided useful information regarding the practices parents report using to lower fat consumption by their preschooler. The recommended changes in the questionnaire mentioned above will enhance the quality of the data collected and better meet the research objectives.

5.4.7.10 Awareness and knowledge of fat recommendations for adults and preschool children

The Nutrition Recommendations for Canadians released in 1990 advised that adult diets should include no more than 30% of energy as fat and no more than 10% as saturated fat (Health and Welfare Canada, 1990a). In 1993, it was recommended by Health Canada that young children's diets not be modified to reduce fat to the level recommended for adults (Health Canada, 1993). It is important to know if parents are aware that the fat recommendations are different for adults and children or if they are misapplying the fat message for adults (i.e., less than 30% energy as fat) to young children.

5.4.7.10.1 Awareness of adult guidelines for fat

Respondents' awareness of fat recommendations for adults was determined by asking two questions. First, respondents were asked if they were aware of any guidelines on what fat intake should be for adults. If they responded yes, they were asked what the guidelines said. If respondents said they were not aware of any guidelines or if they were unable to respond when asked what the guidelines said, then they were asked if they were aware of any information that talked about the type and amount of fat adults should be eating.

Forty-one percent (n=24) of respondents from the total group of 59 respondents indicated that they were aware of guidelines on what fat intake should be for adults. However, 71% (n=42) of respondents either said they were not aware of fat guidelines for adults or did not respond when asked what the guidelines said. These 42 respondents were then asked if they were aware of information about the type and amount of fat that adults should be eating. Of those 42 respondents, 67% (n=28) said they were aware.

5.4.7.10.2 Knowledge of adult guidelines for fat

To assess knowledge, the respondents who indicated they were aware of guidelines on what fat intake for adults should be were asked what the guidelines say. As mentioned above, 42 respondents who indicated they were not aware of guidelines or who could not provide an answer when asked what the fat guidelines say were asked if they were aware of any information about the type and amount of fat adults should be eating. Respondents who indicated that they are aware of information about the type and amount of fat adults should be eating were asked what they had heard. For these two questions, interviewers recorded the responses in the space provided on the questionnaire. The researcher then coded the responses by circling precoded categories or forming new categories based on new information provided by the

respondents. The two questions used to assess knowledge are different, and to ascertain which question elicits the type of information desired, the responses to each question will be reported separately.

Table 20 represents the responses provided by the 24 respondents who indicated they were aware of adult guidelines for fat. Out of the five categories of responses given to this question, two were precoded categories and three were categories that were formed based on respondents' answers, including the most common response. Thirty-three percent of these 24 respondents mentioned a numerical

Table 20. Percentage of respondents who reported they were aware of the fat guidelines for adults by type of response when asked what the fat guidelines for adults say (n=24).

Responses	Total group (n=24)	Not concerned group (n=19)	Concerned group (n=5)
	% (n)	% (n)	% (n)
Mentions a numerical answer	33 (9)	37 (7)	40 (2)
Adults should eat <30% *	17 (4)	16 (3)	20 (1)
Mentions good and bad fats	17 (4)	16 (3)	20 (1)
Adults should lower their intake of fat *	17 (4)	5 (1)	20 (1)
Mentions fat in moderation	4 (1)	5 (1)	0

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

answer (which was often incorrect), relating to amount of fat adults should eat when asked what the guidelines said. A new category of "mentions a numerical answer" was formed to include responses such as:

"Less than 20% of calories from fat."

"Less than 5 grams per serving of fat is okay."

"Sixty grams of fat per day."

"Adults should eat 30 grams of fat."

Only 17% (n=4) of those respondents who were aware (n=24) mentioned the actual recommendation that adults should eat no more than 30% of energy as fat and 17% were also correct in saying that adults should lower their intake of fat. "Good and bad fats" were mentioned by 17% (n=4) of respondents who were aware. Examples of responses that were coded as "good and bad fats" included:

"Most fat should be unsaturated."

"Hydrogenated/palm/coconut oil are bad, fish oils are okay."

Table 21 shows the responses provided by the 28 respondents of the 42 who were asked what they knew about the type and amount of fat adults should be eating. As mentioned previously this question was asked of those 42 respondents who were not aware of recommendations or were unable to respond when asked what the recommendations were. Of the six categories of responses to the question, three were precoded categories and three were coded based on respondents' answers, including the two most common responses.

Table 21. Percentage of respondents who reported they were aware of the type and amount of fat adults should be eating by type of response when asked what they knew about the type and amount of fat adults should be eating (n=28).

Responses	Total group (n=28)	Not concerned group (n=25)	Concerned group (n=3)
	% (n)	% (n)	% (n)
Mentions good and bad fats	50 (14)	56 (14)	0
Mentions fat in moderation	25 (7)	20 (5)	66 (2)
Adults should lower their intake of fat *	14 (4)	12 (3)	33 (1)
Mentions a numerical answer	11 (3)	12 (3)	0
Adults should eat less saturated fat *	4 (1)	4 (1)	0
Adults should eat less cholesterol *	4 (1)	4 (1)	0

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded question

Of those who were aware (n=28) out of the 42 asked about the type and amount of fat adults should be eating, 50% mentioned "good and bad fats", and 25% mentioned "fat in moderation". As noted previously, a new category labeled "good and bad fats" was based on respondents' answers. Some of the responses coded as "mentions good and bad fats" include:

"Polyunsaturated fats are important."

"Eat good fats not bad fats."

"Bad fat is saturated, good fat is unsaturated."

The category fat in moderation was formed to include responses such as:

"Don't go eating Big Macs every day...don't go overboard on high-fat foods."

"Fat in moderation."

5.4.7.10.3 Awareness of fat guidelines for preschool children

Respondents' awareness of fat recommendations for preschool children was determined by asking two questions. First, respondents were asked if they were aware of any guidelines on what fat intake should be for preschool children. If respondents said they were not aware of any guidelines or were unable to say what the guidelines said, then they were asked if they were aware of any information that talks about how to include fat in the eating pattern of preschool children. Of the 59 respondents, only 15% (n=9) indicated that they were aware of guidelines for fat intake for children.

Eighty-five percent (n=50) of respondents who either said they were not aware of fat guidelines for preschoolers or who were unable to indicate what they had heard about the guidelines were asked if they were aware of any information about including fat in the eating pattern of preschool children. Only 16% (n=8) of those asked (n=50) indicated they were aware. It is difficult to determine if there are any trends from the preliminary data as so few respondents indicated they were aware.

5.4.7.10.4 Knowledge of preschool guidelines for fat

To assess knowledge, the nine respondents who indicated they were aware of fat guidelines for preschoolers were asked what the guidelines say. The eight respondents who indicated they were aware of information about including fat in the eating pattern of preschool children were asked what they knew. Interviewers wrote responses given in the space provided on the questionnaire. The researcher then coded the responses by circling precoded categories or by grouping responses into similar themes and forming categories based on new information provided by the respondents. As with the knowledge of the adult guidelines, results for the two questions are reported separately.

Table 22 represents the responses provided by nine respondents when asked what the fat guidelines for preschoolers say. Of the four final response categories, only one was a precoded category, while the other three were formed based on new information provided from the respondents, including the two most frequent responses.

Table 22. Percentage of respondents who reported they were aware of the fat guidelines for preschool children by type of response when asked what the fat guidelines say for preschool children (n=9).

Responses	Total group (n=9)	Not concerned group (n=8)	Concerned group (n=1)
	% (n)	% (n)	% (n)
Preschool children need fat for growth and development	22 (2)	25 (2)	0
Mentions a numerical answer	22 (2)	25 (2)	0
Fat should not be restricted in early childhood *	11 (1)	13 (1)	0
Mentions milk guidelines	11 (1)	13 (1)	0
Other	11 (1)	13 (1)	0
Don't know	22 (2)	13 (1)	100 (1)

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

Of those aware (n=9) of fat guidelines for preschool children, two respondents mentioned that preschool children need fat for growth and development. This was a new category that was formed including the following responses:

“Do need fat to grow...produce growth.”

“Fat needed for their bodies to develop.”

Two of the nine respondents who were aware mentioned a numerical answer. Responses coded as “mentions numerical answer” include:

“40-45% calories from fat.”

“30% of daily intake.”

Of those aware (n=9), only one respondent mentioned that fat should not be restricted in early childhood, which is part of the recommendations for fat and children.

Table 23 represents the responses provided by the eight respondents who indicated they were aware of information on including fat in the feeding pattern of preschool children. Of the four final response categories, two of them were precoded categories and two were categories that were formed based on respondents' answers. Of those aware (n=8), the two most common responses were preschool children need fat for growth and development (mentioned by two respondents) and preschoolers should eat more fat than adults (mentioned by two respondents).

5.4.7.10.5 Proposed changes to questions regarding awareness and knowledge of fat recommendations for adults and preschool children

Adults

Less than half (41%, n=24) of respondents (n=59) indicated that they were aware of fat guidelines for adults. When these 24 respondents were asked what the fat guidelines for adults say, 33% mentioned a numerical answer (which was often incorrect), 17% mentioned “good and bad fats,” and 17% mentioned that adults should eat less than or equal to 30% of energy as fat.

Table 23. Percentage of respondents who reported they were aware of information on including fat in the feeding pattern of preschool children by the type of response when asked what they knew about including fat in the feeding pattern of preschool children (n=8).

Responses	Total group (n=8)	Not concerned group (n=4)	Concerned group (n=4)
	% (n)	% (n)	% (n)
Preschool children need fat for growth and development	25 (2)	25 (1)	25 (1)
Preschoolers should eat more fat than adults *	25 (2)	25 (1)	25 (1)
Fat should not be restricted in early childhood *	13 (1)	0	25 (1)
Mentions milk guidelines	13 (1)	0	25 (1)
Other	25 (2)	50 (2)	0

Notes: The total does not add to 100 due to multiple responses

* Indicates a precoded category

Forty-two respondents who were not aware of adult fat guidelines or who could not respond when asked what they knew about adult fat guidelines were asked if they were aware of information about the type and amount of fat adults should be eating. Sixty-seven percent (n=28) of those 42 respondents asked indicated they were aware of information on the type and amount of fat adults should be eating. Fifty percent (n=14) of those 28 respondents who were aware of information on the type and amount of fat for adults mentioned "good and bad fats," and 25% (n=7) mentioned fat in moderation. Respondents might have mentioned "good and bad fats" most often because the question asked about type of fat first and amount of fat second, or because more media attention is focused on different types of fats rather than the amount of fat that should be eaten.

Parents' awareness and knowledge of fat recommendations for adults was conceptualized as their awareness and knowledge that adults should consume no more than 30% of energy as fat (Health and Welfare Canada, 1990a). Therefore it is

suggested that the information obtained from the question about what respondents had heard about the information on the type and amount of fat for adults be deleted as it does not provide information that meets the objectives of the research.

Only 17% of respondents of those asked about the fat guidelines for adults (n=24) mentioned that adults should eat less than 30% of energy as fat. Even though respondents' knowledge of these guidelines is limited, it is suggested that the question about fat recommendations for adults remain on the final questionnaire. Since the final study will include 500 respondents, there may be a subset of respondents who are knowledgeable about the recommendation, which will allow relationships to be tested. Parents who know this specific guideline may have high knowledge about nutrition in general, which could have an impact on their practices related to fat for their children.

The goal of the *Nutrition Recommendations – The report of the scientific review committee* (Health and Welfare Canada, 1990a) was “to give guidance to professionals and the public about what constitutes a healthful diet” (Health and Welfare Canada, 1990b, p.23). In order for these recommendations to be acted upon and implemented, they must first be understood by the public (Health and Welfare Canada, 1990b). Results from focus group research indicates that messages must be comprehensible, concrete and simple (Health and Welfare Canada, 1990b). For example, focus group research found that consumers neither understood nor knew how to act on the statement, “Reduce your fat intake to 30% of calories” (Health and Welfare Canada, 1990b). This recommendation has been translated for consumers into *Canada's Guidelines for Healthy Eating* (1990b) as “Choose low-fat dairy products, lean meats, and foods prepared with little or no fat” (Health and Welfare Canada, 1990b, p. 5). These messages were then promoted in *Canada's Food Guide to Healthy Eating* (Health Canada, 1992, p. 1-2), as “Choose lower-fat foods more often,” “Choose lower-fat milk

products more often," "Choose leaner meats, poultry, and fish," and "Include other foods in moderation."

Since *Canada's Food Guide to Healthy Eating* (1992) is a consumer friendly document that promotes the general message of how to include lower-fat foods in adults' eating patterns and is one that Canadians report being aware of (National Institute of Nutrition, 1997, Gust et al., 1995), it is suggested that another question which addresses the general messages promoted in this guide regarding fat be asked. Respondents will be asked, "Are you aware of any nutrition messages that talk about how adults should include lower-fat and higher-fat foods in their eating pattern?" To assess knowledge, respondents will be asked what the messages say.

Preschoolers

Few respondents reported being aware of guidelines about fat intake for children or about any information on including fat in the eating pattern of children. Interviewers noted that when answering the belief statements, some respondents mentioned that they thought young children needed more fat than adults but when asked about fat guidelines for children or for information on including fat in a preschooler's eating pattern, respondents had little specific information. Although it is difficult to determine if the poor response is related to a lack of awareness or if it is a problem with the questions used to elicit the information, it is likely related to both low awareness and asking questions that do not elicit the responses desired.

Asking parents if they were aware of any guidelines on what the fat intake for preschool children should be might have implied to parents that they were being asked about their knowledge about a specific document or a specific amount of fat. Considering that the guidelines for children were intended for use by health professionals and not for the general public, asking parents if they are aware of guidelines on what fat intake for their children should be is a question that will likely elicit

few responses. For this reason, it is recommended that the question to determine parents' awareness of recommendations be deleted and instead be replaced by the second alternative question that asks parents about information on including fat in a preschool child's eating pattern. The question will read "From the sources of information you just mentioned, can you tell me what the information says about fat and feeding preschool children?" (Appendix L).

It is also recommended that the order of the questions be changed so that parents are asked about their sources of information on feeding preschoolers before they are asked about their awareness and knowledge of fat recommendations for preschoolers. Several parents mentioned, during the pilot study, that they recalled seeing an article in a parenting magazine regarding fat and children. Parenting magazines are mentioned as a popular source of information for parents. Asking parents about the sources of information they consult regarding feeding preschoolers may trigger them to recall something they have seen, read, or been told. The suggested wording for the follow-up question to sources of information is "From the sources of information you just mentioned, can you tell me what the information says about fat and feeding preschool children?"

It is recommended that the questions pertaining to knowledge of fat guidelines for children and adults be asked in an open-ended question as in the pilot study. The open-ended format provided a range of information about what respondents think about fat in adults and children's diets. As with the pilot study, interviewers should record the answers in the space provided to be coded later by the researcher. The coding categories will be formed based on what the respondents say.

5.4.7.11 Beliefs about fat in preschool children's diets

The belief scale was used to determine parents' beliefs about the role of fat in preschool children's diets. The four conceptual domains tested included parental beliefs

about fat recommendations for preschool children, need for fat for energy, the role of higher-fat foods in a child's healthy diet, and childhood diet affecting incidence of future disease.

5.4.7.11.1 Distribution of responses

Table 24 illustrates parental beliefs about the three belief statements regarding fat recommendations for children. A majority of parents (69%) disagreed that preschool children should be eating low-fat diets like adults should. About half of parents thought that preschool children's fat intake should not be limited as indicated by their response to statements six and nine.

Table 24. Distribution of responses to three belief statements about fat recommendations for preschool children (n=59).

Statement	Agree % (n)	Uncertain % (n)	Disagree % (n)
1. Preschool children should eat low-fat diets just like adults should	10 (6)	20 (12)	* 69 (41)
6. It is best to limit a preschooler's fat intake just as we do for adults	37 (22)	17 (10)	*46 (27)
9. Parents should try to limit the amount of fat their preschoolers eat as much as possible	39 (23)	12 (7)	*49 (29)

Notes: *Denotes responses corresponding with current guidelines/recommendations

Table 25 illustrates parental beliefs about the five belief statements concerning preschoolers' need for fat related to energy. A large number of parents felt that preschoolers needed more fat because they needed energy to grow (71%) and that a preschooler having energy to grow was more important than a low-fat diet (78%). Parents were evenly split on whether cutting out higher-fat foods would make it difficult for preschoolers to meet their high energy needs (38% agreed with the statement; 40% disagreed). Fifty-six percent of parents agreed that higher-fat foods can be important for preschoolers to help meet their high energy needs, although one third (32%) of respondents were uncertain about this. Seventy-nine percent of parents disagreed with

the statement that because preschoolers were small they don't need much energy or fat.

Table 25. Distribution of responses to five belief statements about preschool children's need for fat for energy (n=59).

Statement	Agree % (n)	Uncertain % (n)	Disagree % (n)
3. It is more important for preschoolers to have enough energy to grow than it is for them to have a low-fat diet	* 78 (46)	17 (10)	5 (3)
4. Since preschoolers are small they don't need much energy or fat (n=58) ⁽¹⁾	2 (1)	19 (11)	* 79 (46)
5. Higher-fat foods can be important for preschoolers to help meet their high energy needs.	* 56 (33)	32 (19)	12 (7)
11. Cutting out higher-fat foods would make it difficult for preschoolers to meet their high energy needs (n=58) ⁽¹⁾	* 38 (22)	22 (13)	40 (23)
13. It's okay for preschoolers to eat a bit more fat because they need energy to grow	* 71 (42)	19 (11)	10 (6)

Notes: * Denotes responses corresponding with current guidelines/recommendations

⁽¹⁾ Data missing for one respondent

Table 26 shows the responses to the four belief statements about the role of higher-fat foods in a preschooler's healthy diet. The majority of parents agreed that preschoolers should eat a balance of higher-fat and lower-fat foods (78%) and that higher-fat snack foods like chips and chocolate were okay for preschoolers in moderation (76%). Sixty-one percent of parents disagreed that a preschooler who eats lots of high-fat foods now will never like low-fat foods, whereas the rest of the respondents were evenly divided between agreeing or being uncertain (19% and 20%, respectively). Almost half of parents (49%) disagreed that foods that are really high in fat have no place in a child's healthy diet, whereas the rest of the respondents were evenly divide between agreeing or being uncertain (24% and 27%, respectively).

Table 26. Distribution of responses to four belief statements about the role of higher-fat foods in a preschooler's healthy diet (n=59).

Statement	Agree % (n)	Uncertain % (n)	Disagree % (n)
7. If a preschooler eats lots of high-fat foods when young they will never like low-fat foods	19 (11)	20 (12)	* 61 (36)
8. Preschoolers should eat a balance of higher-fat and lower-fat foods	* 78 (46)	20 (12)	2 (1)
10. Higher-fat foods like chips and chocolate are okay for preschoolers to eat in moderation	* 76 (45)	8 (5)	15 (9)
12. Foods that are really high in fat have no place in a child's healthy diet.	24 (14)	27 (16)	* 49 (29)

Notes: * Denotes responses corresponding with current guidelines/recommendations

Table 27 shows the responses to the two belief statements regarding childhood diets affecting the incidence of future disease. Almost half of respondents (47%) agreed that if a child eats lots of higher-fat foods now that they will become overweight later in life (Table 28). While 43% of parents were uncertain as to whether a child who eats lots of higher-fat foods is more likely to get heart disease later in life, 34% agreed.

Table 27. Distribution of responses to two belief statements about childhood diet affecting incidence of future disease (n=59).

Statement	Agree % (n)	Uncertain % (n)	Disagree % (n)
2. A child who eats lots of high-fat foods is more likely to be overweight later on (n=58) ⁽¹⁾	47 (27)	36 (21)	* 17 (10)
14. A child who eats lots of fat when they are young is more likely to get heart disease as an adult (n=58) ⁽¹⁾	34 (20)	43 (25)	* 22 (13)

Notes: * Denotes the response that represents what is present in literature

⁽¹⁾ Data missing for one respondent

Examination of the frequency of response for each statement revealed that six of the 14 belief statements exhibited very little variation. It is important to have variation within the responses, because this indicates that items discriminate among people and thus allows relationships to be tested. If all respondents answer questions the same way then it is not possible to test if any relationships exist between groups. After reviewing the wording of the statements and comments from the participants, it appears that several of the statements were leading and lacked clarity. In particular, statements one, three, four, eight, 10 and 13 had very little variation in response, with large numbers of respondents, ranging from 69% to 79%, either agreeing or disagreeing with these statements. Interviewers noted that respondents were having difficulty with these six statements and made comments regarding not understanding the meaning of certain words and phrases such as "balance," "moderation," and "a bit more.". As well, interviewers needed to repeat statements that were too long, complex or double-barreled.

The lack of variation in the distribution of responses may be due to the difficulty that respondents had with the meaning of the statements. Changes to statements to make them clearer and less leading and ambiguous should increase the understanding of respondents and would improve the variation in response. The specific problems with these statements and recommendations for changes will be discussed in section 5.4.7.11.5.

5.4.7.11.2 Factor analysis

Factor analysis has been developed primarily for analyzing whether correlations between a set of observed variables can be "explained" in terms of a smaller number of unobservable latent variables or common factors. The correlation between each pair of observed variables results from their mutual association with the common factors (Carmines & Zeller, 1979). Factor analysis is one statistical tool that is useful in

establishing the construct validity of a belief-measuring instrument because it can identify the basic dimensions underlying a group of responses (Sims, 1980). Factor analysis is widely used to assess the construct validity of a test or a scale (University of Texas at Austin Statistical Services, 1995).

The primary purpose of factor analysis is data reduction and summarization. It can be used to determine unidimensionality of a testing instrument (Carruth & Anderson, 1977). If all statements fall into one factor, the instrument is considered unidimensional, which means all statements are highly correlated (Carruth & Anderson, 1977). When the statements are divided among several groups or factors, each group represents a different hypothetical construct or belief (Carruth & Anderson, 1977).

When preparing data for factor analysis, it is important to include only variables that are believed to be related in some way in the factor analysis. As well factors cannot emerge unless there is a sufficient number of observed variables that vary along the latent continuum. A minimum of three observed variables is needed for each factor expected to emerge (University of Texas at Austin Statistical Services, 1995). The sample size must be considered in relation to the number of variables included in the analysis and should be at least 50 (University of Texas at Austin Statistical Services, 1995). A minimum number of five to 10 respondents per statement is the general rule. There is no definitive answer, but the more observations you have, the more valid the results should be (University of Texas at Austin Statistical Services, 1995).

Factor analysis was chosen as a method of analysis to account for the intercorrelations among the belief statements and to identify the latent dimensions that explain why the statements are correlated with each other (University of Texas at Austin Statistical Services, 1995). Despite the fact that the preliminary data did not meet some of the recommendations mentioned above (i.e., the sample size was smaller than recommended and the fourth concept domain contained only two statements), a factor

analysis was still considered useful to determine trends, which will help with revisions to the final questionnaire.

5.4.7.11.3 Cronbach's coefficient alpha

While factor analysis is useful in establishing the construct validity of a belief scale as it identifies the basic dimensions underlying a group of responses, Cronbach's coefficient alpha is useful in determining reliability or the internal consistency of the measurement (Sims, 1980). Cronbach's coefficient alpha uses the variance among all the items simultaneously to determine internal consistency (Sims, 1980) and was used to calculate internal reliability. Based on the general rule that reliabilities should not be below 0.80 (Carmines & Zeller, 1979), Cronbach's coefficient alpha scores greater than 0.80 were considered reliable.

5.4.7.11.4 Results of factor analysis and Cronbach's coefficient alpha

Factor Analysis

Among the 14 belief statements, four factors were expected to emerge, corresponding to the four conceptual domains. The four conceptual domains included parental beliefs about the dietary fat recommendations for preschool children, a preschooler's need for fat for energy, the role of higher-fat foods in a preschooler's healthy diet, and childhood diet affecting incidence of future disease. Table 3 in section 5.3.3 illustrated the four conceptual domains that were included in the belief scale and the corresponding belief statements.

Factor analysis was used to determine which belief statements were actually related by determining which statements were highly correlated. A general rule is that factor loadings greater than 0.30 in value are considered meaningful (University of Texas at Austin Statistical Services, 1995). Based on previous nutrition research that has used factor analysis, a factor loading of 0.40 or greater was regarded as contributing to the composition of a factor (Carruth & Anderson, 1977).

Determining the optimal number of factors to extract is not a straightforward task because the decision is ultimately subjective. Several criteria can be used as guidelines to help establish the number of factors to be extracted. Extracting factors with Eigenvalues greater than 1.0 is one typical way (University of Texas at Austin Statistical Services, 1995). Scree plots can also be used as an informal indicator of the appropriate number of factors, because typically one less factor than the number at the elbow (curve) of the scree plot is appropriate (University of Texas at Austin Statistical Services, 1995).

A factor analysis using four factors was run because four conceptual domains regarding fat and feeding preschoolers were expected to emerge. The Eigenvalues for Factors One (3.87), Two (2.43) and Three (1.61) were well above one, while the Eigenvalue of Factor Four was 1.06, which is just slightly greater than one. The scree plot of Eigenvalues demonstrated that Factors One, Two and Three appeared separate, while Factor Four was right at the elbow of the plot and blended with factors with Eigenvalues of less than one. The results of the factor analysis supported a three-factor model. The results of the factor analysis using three factors is described below. As expected, the belief scale was not unidimensional but contained three factors in this case. Table 28 depicts the seven statements out of the total of 14 statements delineated by factor analysis as Factor One. Based on the statements included in the first factor, Factor One was labeled conceptually as "Beliefs about lower-fat diets for children and risk of future disease." Factor One contained statements that reflected parents' beliefs about the appropriateness of low-fat diets for preschoolers and whether restricting fat was appropriate for preschoolers. This factor also contained statements about parents' beliefs about children's diets and their future risk of disease. Factor One explained the greatest amount of variance (34%). Cronbach's coefficient alpha for the belief statements in Factor One was 0.75, which is slightly below the generally accepted

reliability level of 0.80 (Carmines & Zeller, 1979).

Table 28. Statements emerging as Factor One – Beliefs about lower-fat diets for children and risk of future disease.

Statement	Factor loadings
Statements from Original Conceptual domain # 1	
1. Preschool children should eat low-fat diets just like adults should	.60
6. It is best to limit a preschooler's fat intake just as we do for adults	.72
9. Parents should try to limit the amount of fat their preschoolers eat as much as possible.	.77
Statements from Original Conceptual domain #2	
3. It is more important for preschoolers to have enough energy to grow than it is for them to have a low-fat diet	.57
Statements from Original Conceptual domain #3	
7. If a preschooler eats lots of high-fat foods when young they will never like low-fat foods	.58
10. Higher-fat foods like chips and chocolate are okay for preschoolers to eat in moderation	.42
Statements from Original Conceptual domain #4	
2. A child who eats lots of high-fat foods is more likely to be overweight later on	.59
14. A child who eats lots of fat when they are young is more likely to get heart disease as an adult.	.56
Percentage of variation explained: 34%	
Cronbach's coefficient alpha 0.75	
Eigenvalue 3.89	

Statements one, six and nine were expected to emerge together as they are all related to parental beliefs about fat recommendations for preschoolers and contained similar wording and Table 28 shows that this occurred. Statements six and nine had the

highest factor loadings for Factor One, which means that they are important in interpreting Factor One. Both of these statements involved a parent's belief about limiting fat that preschoolers eat.

Also included in Factor One were statements three, seven and 10 (concept domain 3). Statement three mentions beliefs about preschoolers eating low-fat diets and their energy needs for growth, so it is not surprising that it would cluster together with beliefs about fat recommendations for preschoolers. Statement seven is a futuristic question dealing with a child's consumption of higher-fat foods now and later in life. Statements two and 14 were also included in Factor One. These two statements relate to parental beliefs about a child's present diet and future disease risk. Statements two and 14 were intended to be a conceptual domain related to childhood diets affecting incidence of future disease but did not emerge as a separate factor, perhaps because there were only two statements. Statements two, seven, and 14 are all similar to one another as they involve what preschoolers eat now affecting disease risk and eating habits in the future.

Three belief statements loaded on Factor Two (Table 29). Based on the statements in this factor, Factor Two was labeled as "Higher-fat foods and energy to grow." Statements five and 13 were included in Factor Two and were originally conceptualized as belonging in one conceptual domain which involved a preschooler's need for fat for energy. Belief statement eight also emerged in Factor Two although it was originally included in the concept domain which related to the role of higher-fat foods in a child's healthy diet. It is not that surprising that these three statements emerged together in Factor Two because they all tap into parents' beliefs about the importance of higher-fat foods for a preschooler's energy and growth. Factor Two explained 25% of the variance. Cronbach's coefficient alpha for the higher-fat foods and energy to grow factor was 0.64, which is below the cut off point of 0.80 for reliabilities

according to Carmines and Zeller (1979).

Table 29. Statements emerging as Factor Two – Higher-fat foods and energy to grow.

Statement	Factor loadings
Statements from Original Conceptual domain #2	
5. Higher-fat foods can be important for preschoolers to help meet their high energy needs.	.68
13. It's okay for preschoolers to eat a bit more fat because they need energy to grow	.77
Statements from Original Conceptual domain #3	
8. Preschoolers should eat a balance of higher-fat and lower-fat foods	.65
Percentage of variation explained: 25%	
Cronbach's coefficient alpha 0.64	
Eigenvalue 2.12	

Belief statements four, 11, and 12 loaded on Factor Three (Table 30) which was labeled "Preschoolers and need for fat" (Table 30). Belief statements four and 11 were originally included in conceptual domain #2, preschoolers' need for fat for energy, while belief statement 12 was included in conceptual domain #3, the role of higher-fat foods in a child's healthy diet. These three belief statements may have emerged together because they tap into parents' feelings about children's need for fat and the role of higher-fat foods. Factor Three explained 13% of the variance. Cronbach's coefficient alpha was 0.26, which was considerably below the cut off point of 0.80 for reliabilities (Carmines & Zeller, 1979).

The data from the pilot study did not meet two of the recommendations for using the factor analysis procedure. The first limitation of the data was that the fourth conceptual domain contained only two belief statements. It is recommended that each domain expected to emerge must have a minimum of three statements. This is

important because fewer than three statements is usually not enough to form a cluster. The two statements in the fourth conceptual domain did cluster together in Factor One but were not strong enough to emerge as their own factor. An additional statement in conceptual domain four might have made the fourth domain strong enough to cluster together to emerge as another factor.

Table 30. Statements emerging as Factor Three - Preschoolers and need for fat.

Statement	Factor loadings
Statements from Original Conceptual domain #2	
4. Since preschoolers are small they don't need much energy or fat	.75
11. Cutting out higher-fat foods would make it difficult for preschoolers to meet their high energy needs	-.56
Statements from Original Conceptual domain #3	
12. Foods that are really high in fat have no place in a child's healthy diet.	.53
Percentage of variation explained: 13% Cronbach's coefficient alpha 0.26 Eigenvalue 1.28	

The second limitation was that the sample size may not have been large enough. As mentioned previously, the general rule is a minimum of five to 10 respondents per statement. With 14 statements it would be recommended to have a minimum sample size of 70 ($14 \times 5 = 70$). Since the sample size was only 59 in the pilot study, the results of the factor analysis may have been different with a larger sample size of 70 or more. However, it is important to note that there is no definitive answer to the appropriate sample size when conducting factor analysis but generally, the larger the sample size, the better the results (University of Texas at Austin Statistical Services, 1995).

The factor analysis procedure was run even though two criteria for factor analysis were not fully met. The factor analysis was still considered useful to determine that the scale was not unidimensional. While it was expected that four factors based on the four conceptual domains would emerge from the factor analysis, three factors emerged instead. The statements that emerged in Factors One, Two, and Three in the factor analysis did not correspond precisely to the original four conceptual domains one, two and three (Table 3, section 5.3.3). However, as shown by Tables 28 to 30, some statements from the same conceptual domains did cluster and emerge together in the same factors. All statements included in the conceptual domains one and four did cluster and emerge together in Factor One, while two out of the four statements in the conceptual domain three also clustered together and emerged in Factor One. Two of the five statements in conceptual domain two clustered together and emerged in Factors Two and Three. The remaining statements from conceptual domains two and three emerged in various factors.

Although the results of the factor analysis were different than expected, many of the statements that were conceptualized together did form clusters and emerge together in various factors. After reviewing the interviewers' comments regarding the statements and considering the lack of variability for some of the statements, it can be concluded that had the wording of these statements been stronger, conceptual domains one, two, and three may have emerged as discrete factors.

5.4.7.11.5 Proposed changes to questions about beliefs

Examination of the frequency of response for each statement revealed that six of the 14 belief statements exhibited very little variation. It is important to have variation within the responses, because this indicates that items discriminate among people and allows relationships to be tested. If all respondents answer certain questions the same way, then relationships cannot be tested between groups. After reviewing the wording of

the statements and comments from the participants, it appears that several of the statements could be reworded. Suggested wording changes to these statements will be discussed below.

A large proportion of respondents (69%) disagreed with statement one that "Preschool children should eat low-fat diets just like adults should." It is not surprising that many parents would disagree with this question as it compares needs of adults and children, and many parents would believe that their children would have different needs. It is suggested that the comparison to adults be removed and that the statement be changed to "Preschool children should eat low-fat diets."

Seventy-eight percent agreed with statement three, "It is more important for preschoolers to have enough energy to grow than it is for them to eat a low-fat diet." This question was difficult for some respondents to answer and many respondents needed the question to be repeated. It appears that this question is too long and complex for a telephone interview. This question is also leading, because it seems reasonable that most parents would be inclined to agree about the importance of their child growing properly. It is recommended that the wording be changed to "It is important for preschoolers to have fat in their diet."

Seventy-nine percent of respondents disagreed with statement four; "Since preschoolers are small they don't need much energy or fat." Respondents commented that preschoolers need energy but not necessarily from fat. This question was poor in structure as it is double-barreled. Parents may agree that preschoolers need more energy but disagree that they need more fat. It is recommended that the word energy be eliminated from the statement so that it now reads "Since preschoolers are small they don't need much fat."

Statement number eight was "Preschoolers should eat a balance of higher-fat and lower-fat foods." Seventy-eight percent agreed with this question. Some

respondents were unclear about the word "balance" and said their answer depended on if the higher-fat foods were healthy foods or "junk foods.". Some parents also mentioned that the type of fat was important. Removing the word "balance" to read "Preschoolers should eat both higher-fat and lower-fat foods" improves the statement.

Seventy-six percent of respondents agreed with statement 10, "Higher-fat foods like chips and chocolate are okay for preschoolers to eat in moderation. Several parents commented that they would have liked "moderation" defined and that these foods are okay but not if eaten everyday. It is recommended that this statement be changed to "Foods like chips and chocolate are okay for preschoolers once in a while."

Seventy-one percent of respondents agreed with statement 13, "It's okay for preschoolers to eat a bit more fat because they need energy to grow." This statement may also have been too simple, because it is obvious that preschoolers need energy to grow and 71% of respondents agreed with it. As well, some respondents were unclear on what the phrase "a bit more" meant. This statement will be deleted as it is ambiguous, and statement five, which is similar, will be retained.

Other changes to the wording of the statements include removing extreme words or phrases like "lots," "really high in fat," "never," and "as much as possible." These words and phrases are too strong and definite and may lead the respondent to a certain answer. The changes to the wording of the belief statements will make them clearer and therefore a better measure of parents' beliefs.

Modification, addition, and deletion of belief statements were made based on the results derived from the factor analysis, Cronbach's coefficient alpha, variation in responses, and interviewers' comments on how respondents reacted to the belief statements. Changes made to the belief statements were based largely on interviewers' comments about the difficulty respondents had with answering the questions and the comments made by respondents themselves during the pilot study. Based on

interviewers' and respondents' comments, it appeared that some statements were unclear, ambiguous, leading, or double-barreled. The problems with wording made some statements difficult for respondents to answer and likely led to the lack of variation within responses. It therefore appears that improving the quality of the statements will increase the validity and reliability of the belief scale.

For the final study it is recommended that the belief scale consist of three conceptual domains. The three conceptual domains will include need for fat for energy, fat and future health/eating habits, and the role of fat and higher-fat foods in a preschool child's healthy eating (Table 31).

Conceptual domain one focuses on the need for fat for energy. It includes statements relating to the dietary fat recommendations for children and preschoolers' need for more fat to meet increased energy needs (Table 31). In the pilot study, parental beliefs about the dietary fat recommendations for children and the need for fat for energy were two separate conceptual domains. However, the dietary fat recommendations for children includes the concept of fat needed to meet preschoolers' high energy needs for growth and therefore will be considered as one conceptual domain for the final study. Statement nine has been deleted from the original conceptual domain one because it was very similar to statement six, which has been retained. Statements five and 13 from the original conceptual domain two were also similar and therefore statement five has been retained and statement 13 has been deleted. It is recommended to keep six statements in conceptual domain one as it is the most important domain in the research.

Conceptual domain two is related to parental beliefs about fat and future health/eating habits. One more statement has been added to conceptual domain two to make it more conceptually sound (University of Texas at Austin Statistical Services, 1995). Conceptual domain two will contain a total of four statements relating to parental

beliefs about children's eating habits, specifically fat in relation to their future eating habits and likelihood of disease (Table 31).

Table 31. Conceptual domains and corresponding belief statements (Final Study)

Conceptual domain	Belief statement
<p>Conceptual domain 1</p> <p>Need for fat for energy.</p>	<p>1. Preschool children should eat low-fat diets (negative wording)</p> <p>3. It is important for preschoolers to have fat in their diet (positive wording)</p> <p>4. Since preschoolers are small, they don't need much fat. (negative wording)</p> <p>5. Fat can be important for preschoolers to help meet their energy needs (positive wording)</p> <p>6. It is best to limit a preschooler's fat intake (negative wording)</p> <p>11. Cutting out fat would make it difficult for preschoolers to meet their energy needs (positive wording)</p>
<p>Conceptual domain 2</p> <p>Fat and future health/eating habits.</p>	<p>2. A preschooler who eat lots of fat is more likely to have a weight problem later on (negative wording)</p> <p>7. A preschooler who eats lots of fat will want lots of fat when they are grown up (negative wording)</p> <p>14. A preschooler who eats lots of fat is more likely to get heart disease later on (negative wording)</p> <p>New. The amount of fat a preschooler eats doesn't make a difference in their chance of getting a disease, like cancer (positive wording)</p>
<p>Conceptual domain 3</p> <p>Role of fat and higher-fat foods in a preschool child's healthy eating</p>	<p>8. Preschoolers should eat both higher-fat and lower-fat foods (positive wording)</p> <p>10. Foods like chips or chocolate are okay for preschoolers to eat once in awhile. (positive wording)</p> <p>12. Foods that are high in fat have no place in a preschooler's healthy eating (negative wording)</p> <p>New. Foods like cheese, eggs or peanut butter can be part of healthy eating for preschool children (positive wording)</p>

Conceptual domain three is related to parents' feelings about the role of fat and higher-fat foods in a preschool child's healthy eating (Table 31). It is recommended that conceptual domain three contain four statements so it will be as conceptually sound as conceptual domains one and two (University of Texas at Austin Statistical Services, 1995). As mentioned above when discussing the lack of variation in statement eight, many respondents indicated they felt differently about higher-fat "healthy" foods such as milk, eggs, or cheese than higher-fat "junk" foods. A question that addresses parental beliefs about higher-fat nutritious foods would be beneficial to determine if parents do feel differently about these two food categories. Therefore a belief statement which addresses parents' beliefs about higher-fat nutritious foods has been added to concept domain three.

In its final form the belief scale will consist of 14 statements distributed among the three conceptual domains and will reflect a balance between positive and negative beliefs (Table 31). The statements are relevant to what is currently recommended for children according to the *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993) and the *Canada's Food Guide to Healthy Eating-Focus on Preschoolers* (Health Canada, 1995) documents. The response format will remain as a three-point Likert-type scale with a category continuum range of agree/uncertain/disagree. Scoring will be reversed for negative statements.

5.4.7.12 Sources of nutrition information for feeding preschoolers

The sources of nutrition information consumers use is always of interest when considering nutrition knowledge and practices of consumers. Therefore, respondents were asked to name as many sources as possible for their information on feeding preschoolers. This question was left open-ended. The interviewer circled appropriate answers from the precoded list or wrote responses as necessary. The researcher then summarized and coded the open-ended answers in similar categories.

Table 32 lists the most common sources of information on feeding preschoolers mentioned by respondents. The most common source was friends/relatives/coworkers (49%), followed by magazines (47%), physician/nurse (32%), books (31%), and common sense (24%). Table 32 shows that 24 different categories of information sources were mentioned by respondents. Of those 24, 13 were precoded categories, including the top four most frequent responses. Eleven new categories were developed based on information provided by respondents.

5.4.7.12.1 Proposed changes to sources of information

This open-ended question was effective in eliciting what sources of nutrition information respondents use, and it is therefore suggested that it remain unchanged for the final questionnaire (Appendix L). The following two sources of information were mentioned by many respondents and should be added to the precoded list: common sense/own instinct and *Canada's Food Guide to Healthy Eating* (Health Canada, 1992). These new categories are obvious and do not require interpretation on the part of the interviewer.

5.4.7.13 Revision to conceptual definition for final study

As previously described parents' awareness and knowledge of fat recommendations was low. It is recommended that the conceptualization of respondents' knowledge and awareness of fat recommendations be modified to include both the recommendation for fat (i.e., fat less than 30% of energy) and concepts that are promoted in consumer materials (e.g., *Canada's Food Guide to Healthy Eating*, Health Canada, 1992).

Table 32. Reported sources of nutrition information for feeding preschoolers (n=59).

Source	% (n)
Friends/relatives/coworkers *	49 (29)
Magazine articles *	47 (28)
Family physician/nurse *	32 (19)
Books *	31 (18)
Common sense/own instinct	24 (14)
<i>Canada's Food Guide to Healthy Eating</i>	17 (10)
Radio/TV *	15 (9)
Newspapers *	12 (7)
Public Health/Learned from delivering in hospital	10 (6)
Learned from growing up	8 (5)
Learned through education/work	8 (5)
Internet *	7 (4)
Learned from first child/own experience	7 (4)
Product labels *	5 (3)
Community events	5 (3)
Day care	3 (2)
Health association materials (heart and stroke, cancer etc.) *	3 (2)
Food advertisements *	2 (1)
Food company materials (beef, milk board, Heinz, etc.) *	2 (1)
Dietitian/nutritionist *	2 (1)
Naturopath *	2 (1)
Pamphlets (unspecified)	2 (1)
Media (unspecified)	2 (1)
Cookbooks	2 (1)
Other	10 (6)

Notes: The total does not add to 100 due to multiple responses

* Indicates precoded category

6.0 SUMMARY, LIMITATIONS, CONCLUSIONS, AND IMPLICATIONS

6.1 Summary

The objective of the present study was to develop a telephone questionnaire that measured the awareness and understanding of dietary fat recommendations for children by parents of preschool children and the parents' use of practices to lower fat when feeding their children. The process of developing the questionnaire included the following three steps: 1) collecting qualitative data through focus groups, 2) questionnaire review by a panel of nutrition experts, and 3) pretesting the questionnaire in a pilot study with a random sample of parents of preschool children in Manitoba.

This questionnaire was developed in order to fulfill the objectives of the final study. These objectives are to: 1) determine if parents of preschool children are aware that dietary recommendations for fat are different for young children and adults, 2) examine parents' understanding of concepts surrounding the fat message as it applies to young children, 3) determine parents use of practices to lower fat when feeding their preschool children, and 4) examine factors that influence parents' awareness and understanding of the dietary fat message for children and their use of practices to lower fat when feeding their preschool children.

Findings from focus group discussions and development of the questionnaire

The focus group discussion method was chosen to collect qualitative data for the study mainly because of the potential for group interaction. Three focus groups were conducted with parents of preschoolers in Winnipeg (n=14). Focus groups were held at the most convenient place and time of day for the parents, and informed consent was obtained. Two of the focus groups were audiotaped and transcribed. A semi-structured moderator's guide (Appendix E) was used during the focus groups to examine parents' awareness of fat recommendations for children, their understanding of concepts

surrounding the dietary fat message as it applies to children, and parents' use of practices to lower fat when feeding their preschoolers. Individual telephone interviews were conducted with parents who were unable to attend the first focus group but consented to a taped, telephone interview (n=2). The transcripts from the focus groups and individual interviews were read by the researcher, and sentences and phrasing were summarized according to the theme areas. Respondents' words and phrases were used to influence the design and content of the questionnaire.

The findings of the focus groups and individual interviews provided many insights into parents' thoughts surrounding the role of fat in a preschooler's diet and related issues and were used to develop the first draft of the preliminary questionnaire (Appendix G) which was subsequently sent for expert review. These findings are:

1. Parents have low awareness of fat recommendations for adults and children. As expected, parents in the focus groups generally had low awareness of the fat recommendations for adults and children. Therefore, determining parents' awareness and knowledge of fat recommendations for adults and children was considered an important issue to explore in the questionnaire.
2. Parents lack knowledge and understanding but expressed beliefs about fat messages for children. Originally parents' understanding of key concepts in the fat message as it applies to young children was to be measured. Parents in the focus groups appeared to lack knowledge and understanding about fat in a child's diet but expressed beliefs and feelings about fat in a child's diet. Therefore, parental beliefs about concepts surrounding the fat messages as they apply to children was measured in the questionnaire rather than their understanding.
3. Parents are using practices to lower fat consumption by their preschooler. Generally, the practices reported were similar to practices cited in the literature. Based on the focus group discussions, it seemed that using practices to lower fat was a habit

for many parents when preparing meals and choosing foods for their preschool children. Therefore, the practices parents are using to lower fat during food preparation, when limiting or excluding certain foods, and while buying foods was to be measured by three closed-ended questions. A closed-ended question format was chosen as there was concern that some parents may not think to mention all the lower-fat practices they are using because these practices have become part of their routine.

4. Parents have perceptions, degrees of concern, and reasons for concern about the amount of fat in their preschool child's diet. During the focus group discussions, it appeared that some parents had already made changes to lower the amount of fat in their family's eating pattern. Many of the parents who had made these changes were not concerned about the fat their children were eating. This interesting finding led to the inclusion of questions to determine if parents thought their child ate too much, the right amount, or too little fat. Determining the level of concern parents had about their child's intake of fat and the reason for their concern were also considered important to explore in the questionnaire.

Findings from expert review and recommendations for changes to the questionnaire

The next step in the process of developing the questionnaire was a review of the questionnaire for face validity by a panel of nutrition professionals from across Canada (n=12) (Baker, 1988). Experts were given a description of the project, the questionnaire (Appendix G), the methods for measurement of the variables and the study objectives. Experts provided feedback on the content and design of the questionnaire and whether anything else should be explored. Comments from experts were summarized and appropriate changes to the questionnaire were implemented. The main recommendations for change in the questionnaire were:

1. Change the order of some questions. Experts were concerned that the questions to determine parents' awareness and knowledge of fat guidelines for adults and children were positioned first in the questionnaire. Experts felt these questions would be difficult for parents to answer and may cause them to feel inadequate. As well, the placement of these questions first in the questionnaire may bias the way respondents answer later questions in the questionnaire. For these reasons, these questions were moved to the end of the questionnaire in the revised pilot questionnaire (Appendix H).
2. Shorten the length of the questionnaire. Experts recommended doing this by removing several questions as well as several belief statements which were similar to one another.
3. Change to an open-ended question format to determine practices used to lower fat. The questions to determine practices that parents were using to lower fat for their children were closed-ended in the questionnaire submitted to the expert panel (Appendix G). Experts had two concerns with the closed-ended questions. First, since the practices were all focused on lowering fat, experts thought parents would be more likely to indicate using more practices because they think they should be (i.e., social desirability). Second, experts indicated that these questions would only provide information on the practices and foods which were on the list, which might not be what is important to parents. These questions were therefore changed to an open-ended question format (Appendix H).
4. Decrease the emphasis on fat in the questionnaire. Experts were concerned that most of the questions in the questionnaire asked about fat in children's diets, which could lead parents to become concerned about the fat in their child's diet. The first draft of the preliminary questionnaire (Appendix G) was more directive and asked parents what had caused them to be concerned about fat. To decrease the emphasis on fat in the revised pilot questionnaire (Appendix H), fat was put in the context of healthy eating.

Parents were first asked to indicate their degree of concern about their preschooler eating too much fat along with nine other feeding issues (e.g., dawdling at meals, having a poor appetite, not drinking enough milk, etc.). Then this question was used to divide parents into two groups; those who were concerned about fat and those who were not. Parents were also asked for their reasons for being concerned or not concerned about fat. In addition, the questions to determine practices used to lower fat were asked in a two part question. First parents were asked if they were doing anything to lower fat during 1) food preparation, 2) when buying foods and 3) by limiting or excluding certain foods. The parents who indicate doing something were then asked what they were doing in an open-ended format. This takes the focus away from fat as it is not assumed that parents are doing things to lower fat. Instead parents are given the opportunity to say that they are not doing anything to lower fat, or, if they are doing something, then they answer in their own words.

Findings from pilot study and recommendations for changes to the questionnaire

Pretesting the questionnaire on a random sample of parents of preschool children was the final stage in the developmental process of questionnaire construction. Findings from the pretest were examined to determine if the data obtained matched the research objectives, and any appropriate changes were made to the questionnaire before its use in the final study. As well, the pilot study was useful to work out any "bugs" in the implementation process, including assessing the response rate, training interviewers, administration of telephone questionnaire procedures, and data entry and analysis.

A random sample of parents of preschool children (24-48 months) was selected from the population of preschool children in Manitoba. The sample was obtained from the Manitoba Health Administrative Database, which lists all persons for medical coverage. A sample size of 30, 6% of the desired sample for the final study (n=500),

was considered sufficient to pretest the questionnaire. Two nutritional professionals were recruited as interviewers for the project and trained in order to standardize the interview procedures.

One hundred and fifty letters were mailed to potential respondents and 77 people were contacted by phone. The response rate for the pilot study was 88%, which is based on the number of completed questionnaires divided by those contacted (68/77). The 88% response rate falls within the average range of 73% to 92% for telephone surveys conducted with the general public (Dillman, 1978). A large percentage of the sample (43%) was not contacted because some of the potential respondents had moved or no telephone number could be found.

Although it was not possible to compare the participants who were contacted to those who could not be contacted, it was possible to compare demographic characteristics of the parents in the pilot study to Statistics Canada information for Manitoba families. Based on available Statistics Canada information it appears that the parents in the pilot study do approximate the Manitoba population on mothers' and fathers' education levels, fathers' employment status and rural/urban residence. The parents in the pilot study appear to differ from the Manitoba population on two variables; mothers' employment status and family income. It appears that more mothers in the pilot study were employed than the Manitoba population of women with children under six. As well, families who participated in the pilot study may earn less than the average 1997 family income of all husband and wife families. However, it is important to remember that the Statistics Canada comparison groups differ from the population in this study. Mothers in this study had children under four while the Statistics Canada information is available for mothers with children under six. As well Statistics Canada obtained the family income through an in person interview while consulting the person's 1997 tax forms which is much different than the present study in which parents were

asked to choose their family income from six income categories. These differences may account for why the parents in the pilot study differed from the Manitoba population on these two variables.

Sixty-eight parents participated in one of the three versions of the pilot questionnaire. Fifty-five percent of mothers and 57% of fathers were high school graduates or had less than high school, while 43% of mothers and 40% of fathers had a college or trade degree or a university degree. Fifty-five percent of mothers worked either full-time (21%) or part-time (34%), while 41% were not employed outside of the home. Ninety-two percent of fathers in this study were employed full-time (90%) or part-time (2%), while 2% were not employed. Thirty-six percent (n=21) of the 59 respondents who answered the income question earned over \$55,000 before taxes, while 27% (n=16) earned under \$35,000 and 37% (n=21) earned between \$35,000 and \$55,000. Sixty-six percent of respondents lived in Winnipeg, 93% were married or partnered, 64% of the mothers and fathers were between 31-40 years of age, and 26% of respondents were first time parents. The gender and ages of children were evenly distributed between males and females and two- and three-year olds for the total group.

The procedures used to train interviewers, administer the questionnaire, and enter and analyze the data worked well and are appropriate for the final study. The findings from the pilot study demonstrated that the questionnaire flowed well, and the open-ended format which was used for many of questions elicited relevant information from respondents. Based on the results of the pilot study and the comments from interviewers and respondents, several changes were made to the questionnaire to be used in the final study. The main changes recommended to the questionnaire include:

1. Delete precoded categories for some questions. It is recommended that the precoded categories for questions to assess parents' reasons for being concerned or not concerned about too much fat be deleted. Respondents provided many reasons for why

they were or were not concerned about their preschooler eating too much fat. Many of these responses were new reasons that were not anticipated as a precoded category on the questionnaire. For this reason the precoded categories that appear on the questionnaire will be removed for the final study. Instead of circling precoded categories, interviewers will record parents' responses verbatim and the researcher will code respondents' answers into categories.

It is recommended that the majority of precoded categories for questions used to assess parents' use of practices to lower fat consumption by their preschoolers be deleted. Many of the practices parents mentioned using to lower fat during food preparation, while buying foods, and when limiting or excluding certain foods were not anticipated responses that were precoded on the questionnaire. Since many of the practices used by parents were unanticipated, the majority of precoded categories will be eliminated from the response format for the questions to determine practices parents are using to lower fat. In the final study the interviewers will record responses and the researcher will code respondents' answers into categories.

2. Add new questions. Based on the parents' responses, two new questions will be added to the final questionnaire. The first question will determine if the preschooler is eating the same foods as the rest of the family. The second new question will determine if parents are using substitution as a way to lower fat for their children.

To determine if the preschooler is eating the same foods as the rest of the family, parents will be asked if what they prepare and buy for their preschooler is generally what everyone else in the family eats. Respondents who answer no or usually will be asked what is different about what they do for their preschooler compared to the rest of the family. This question was added to confirm that responses do relate to the preschool child and not to the adults or older children.

The second new question to determine if parents are substituting lower-fat foods for higher-fat foods was added because several respondents mentioned that they were doing this. To determine parents' use of substitution, parents will be asked if they substitute one food for another to try to reduce fat when they are choosing foods for their preschooler.

3. Change the belief scale. Based on parents' comments, changes to the wording of the belief statements were made to make them clearer and therefore a better measure of parents' beliefs. These changes included making statements easier to understand, and making sure statements were not double-barreled or leading. A belief scale of 14 statements consisting of positively and negatively worded statements is recommended for use in the final study. That belief scale will consist of three conceptual domains rather than the four used in the pilot study. Those three conceptual domains are parental beliefs about the need for fat for energy, fat and future health/eating habits, and the role of fat and higher-fat foods in a preschool child's healthy eating.

4. Change the questions to assess parents' awareness and knowledge of fat guidelines for adults and children. The question that asked parents if they are aware of fat guidelines for adults will remain while the question which asked parents their awareness of type and amount of fat will be deleted as it did not provide information that matched the conceptualization of parents' awareness and knowledge of fat guidelines for adults (i.e., that adults should consume no more than 30% of energy as fat). An additional question was added that assesses parents' awareness of more general fat messages related to foods as promoted in *Canada's Food Guide to Healthy Eating* (Health Canada, 1992). The question that asked parents if they were aware of guidelines on what fat intake should be for preschoolers will be deleted, because parents' awareness is expected to be low. Instead, parents will be asked where they get

their information on feeding preschoolers and then they will be asked what the information says about fat and feeding preschool children.

5. Change the order of some questions. Parents will be asked for their sources of information for feeding preschoolers before their awareness and knowledge of fat guidelines for children is determined. Asking parents what sources of nutrition information they use may trigger them to recall something they have seen, read, or been told about what is recommended for including fat in the eating pattern of children.

6. Include more higher income brackets in the question to determine respondents' income. The question to determine respondents' income was changed to include more higher income brackets. The question used to assess income in the National Population Health Survey (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999) will be used.

Possible trends from pilot study

Although the data from the pilot study is based on only 59 respondents, it suggests some interesting findings and possible trends that will be examined in more detail in the final study. The main findings are:

1. The majority of the 59 parents in the pilot study (76%) were not concerned about their preschoolers eating too much fat. Parents appeared more concerned about their children eating too much sugar (46%), too much junk food (41%), not enough vegetables (49%), and a limited variety of foods (41%) than they were about too much fat (24%).
2. Of those concerned about fat (n=14), 36% mentioned that that they were concerned because their preschooler or family in general ate foods high in fat, and 29% felt that eating too much fat was unhealthy. On the other hand, parents (n=45) who were not concerned about their children eating too much fat said they were not concerned because their child does not eat much fat or higher-fat foods (27%) or because they control or regulate their preschool child's diet (24%).

3. Awareness and knowledge of fat recommendations for both adults and children was low. Only 41% of respondents indicated they were aware of fat guidelines for adults, and 15% were aware of recommendations for children. Of those aware of fat guidelines for adults (n=24), only 17% (n=4) mentioned the actual guideline that adults should eat less than 30% of energy as fat and 17% (n=4) were also correct in mentioning that adults should lower their intake of fat. Only two respondents of eight who were aware of fat guidelines for children said that preschoolers should eat more fat than adults or that fat should not be restricted in early childhood.

4. Overall, parents felt strongly about the important role of fat in children's diets as reflected in the distribution of responses to the 14 individual belief statements. It appears that parents believe that children need fat for energy and that they should not be consuming low-fat diets. To illustrate, the majority of parents (69%) disagreed that preschool children should be eating low-fat diets like adults and 49% disagreed that parents should be trying to limit the amount of fat their preschoolers eat as much as possible. A large number of parents felt that preschoolers needed more fat because they needed energy to grow (71%) and that a preschooler having energy to grow was more important than a low-fat diet (78%). Parents were split on whether cutting out higher-fat foods would make it difficult for preschoolers to meet their high energy needs (38% agreed while 40% disagreed).

Parents appeared to have a positive view about the role of higher-fat foods in a preschooler's healthy diet. The majority of parents agreed that preschoolers should eat a balance of higher-fat and lower-fat foods (78%) and that higher-fat snack foods like chips and chocolate were okay for preschoolers in moderation (76%).

Parents appeared uncertain about fat in a child's diet affecting future health. Almost half of respondents (47%) agreed that if a child eats lots of higher-fat foods now that they will become overweight later in life. While 43% were uncertain as to whether a

child who eats lots of higher-fat foods is more likely to get heart disease later in life, 34% agreed.

5. The majority of parents indicated that they were using practices to lower fat during preparation (85%), while buying foods (71%), and when limiting or excluding certain foods (69%) for their preschoolers because of fat. Of those (n=50) taking action to lower fat during preparation, the most frequent practices mentioned were baking or broiling foods instead of frying (36%) , trimming fat from meat (30%), and using little or no oil, butter or margarine during preparation (26%). The most common actions mentioned by those (n=42) who indicated using practices to lower fat while buying foods were reading the labels for fat information (29%), buying leaner cuts of meat (26%), buying 1% milk (19%), and buying lean or extra lean beef (17%). The foods most commonly mentioned by those who say they are taking action to lower fat (n=41) when limiting or excluding certain foods for their preschooler are junk foods (24%), fast foods (22%), and chips (22%).

Although the above findings are based on a small number of respondents, they do suggest some interesting trends for exploration in the final study. A larger sample in the final study will allow relationships among variables to be tested and allow exploration of how demographic variables affect awareness, knowledge, and beliefs.

6.2 Limitations

Three focus groups of eight to 10 parents per group were planned to consist of parents living in low, middle and high socio-economic status neighbourhoods. Day care centres and a community group were selected based on the directors' perception of the socio-economic status of the general catchment area. The results of recruitment showed that less than the desired number of parents participated in each group (n=14 in the three groups) and that the groups were not distinct by socio-economic status. The three focus groups were not homogeneous by socio-economic status because the

recruitment was based on perceived socio-economic status of the neighbourhoods instead of screening each parent on socio-economic status using income and educational attainment. Based on the problems in recruiting, the data for the focus groups were pooled instead of comparing by low, middle, and high socio-economic status. Since the focus group data was pooled, it was not possible to interpret data by socio-economic group. The inability to interpret data by socio-economic status is a limitation as high socio-economic status (i.e., income and educational attainment) is associated with positive health behaviours and knowledge (Norman, 1986; Levy et al., 1993). The researcher was unable to gather data on a sufficiently large number of parents of low, middle, and high socio-economic status in order to determine if their views differed on important study variables (e.g., awareness and understanding of fat recommendations for children) which would have had implications for the design of the telephone questionnaire. The pooled data obtained, however, indicated that the focus group participants varied on demographic characteristics. The 14 focus group participants varied on employment status, age, educational attainment, and income. Therefore the pooled data which was used to influence the content of the questionnaire was based on parents with different demographic variables. This is important since the questionnaire for the final study will be used with the general population of parents of preschool children with varying demographic backgrounds.

In addition to these concerns regarding recruitment, the third focus group did not consent to a taped session. This limits the value of the data obtained because direct phrases and sentences by participants could not be used.

A further limitation is the use of the Manitoba Health Database as a sampling frame for the pilot study. The disadvantage of this sampling frame is that it is not up-to-date as a considerable number in the frame could not be contacted. Forty-three percent (n=65) of the sample were not contacted because they had moved, their letters were

returned, their telephone number was not found, or their phone number was disconnected or was a wrong number and a new number could not be found. Having a large no-contact group is a limitation as it is unknown if the group who cannot be contacted is different from the contact group on important study variables (e.g., awareness, knowledge, and beliefs about fat in children's diets or use of lower fat practices). There was no way to compare the group who were contacted with the group who could not be contacted, however, when the demographic characteristics of the group who were contacted are compared to Statistics Canada data, the study participants appear similar to the population of Manitoba parents of preschool children. The parents in the pilot study were similar to Statistics Canada data for the population of Manitoba parents of preschool children on mothers' and fathers' educational attainment, fathers' employment status, and rural/urban residence. The parents in the pilot study were different than Statistics Canada data on mothers' employment status and family income. It appeared that more mothers in the present study were employed compared to the population of Manitoba parents and that participants earning over \$55,000 were underrepresented. However, it is important to note that the comparison group in Statistics Canada is slightly different than the pilot study population (i.e., for mothers' employment status, Statistics Canada data is based on Manitoba women with preschool children under the age of six, while the pilot study includes mothers with preschool children aged two and three, and, for income, the Statistics Canada data includes all husband and wife families with children but does not include single parent families, while the pilot study includes both single and two parent families). As well, the method used by Statistics Canada to ask the income question is somewhat different from the methods used in the pilot study (Statistics Canada data was collected through in-person interviews using 1997 tax forms, while in the pilot study parents were asked to choose from six income categories during a telephone interview).

6.3 Conclusions

The objective of this research was to develop a telephone questionnaire that measured the awareness and understanding of dietary fat recommendations for children by parents of preschool children and the parents' use of practices to lower fat when feeding their children. It is concluded that the final questionnaire developed is appropriate to use on all parents of preschoolers in Manitoba for the final study and will generate data to meet the research goals of that study. This conclusion is justified through the three-step developmental process used which included 1) collecting qualitative data through focus group discussions with parents of preschool children, 2) questionnaire review by a panel of nutrition experts with experience related to paediatrics, and 3) pretesting the questionnaire on a random sample of parents of preschool children in Manitoba. These steps helped insure the face validity of the questionnaire.

Collecting qualitative data through focus group discussions was essential to ensure the face validity of the questionnaire. Conducting three focus groups (n=14) allowed the researcher to elicit an insider's view from the parents and provided valuable insight into their knowledge, awareness and behaviours surrounding fat in children's diets. As well the focus groups were valuable in ensuring that there were no overlooked areas of importance and that the content of the questionnaire and the way the questions were asked were appropriate.

The second process in developing the questionnaire also established face validity through a review of the questionnaire by a panel of nutrition paediatric professionals from across Canada (n=12). The quality of the questionnaire was strengthened by implementing the experts comments and suggestions on content and design.

The third process used to develop the questionnaire was to pretest it on a random sample of parents of preschool children ($n=68$). The findings from the pretest were examined to ensure that the data collected would match the research objectives. As well these finding were used to make appropriate changes to the questionnaire itself, and to the process used to administer the questionnaire including assessing the response rate, training interviewers, administration of telephone questionnaire procedures, and data entry and analysis. Pretesting the questionnaire on a random sample and a sample with the same characteristics as in the final study and using the pretest findings to influence the design of the final questionnaire ensures that the questionnaire is appropriate to use on the target population.

Finally, the quality of the questionnaire is strengthened by the fact that it was developed through information obtained from parents with differing backgrounds in both the focus groups and the pretest. Even though the focus groups could not be analyzed by low, medium and high socio-economic status as planned, the data that was gathered indicated that the focus group participants varied on employment status, educational attainment, age and income. The interpretation of the data obtained from the pretest was limited by the fact that there was a large group who could not be contacted for whom there was no information to determine if they were very different from those contacted on important study variables. However, the quality of the questionnaire is strengthened by the fact that those who could be contacted were similar to Statistics Canada information for the population of Manitoba parents of preschool children on mothers' and fathers' educational attainment, fathers' employment status, and rural/urban residence. Therefore the changes made to the final questionnaire reflect data from parents similar to the population of parents in Manitoba.

6.4 Implications

The three-step process used to develop the questionnaire involved collecting qualitative data through focus group discussions, review by a panel of nutrition experts, and pilot testing the questionnaire on a random sample of parents. The methods used and insights gained during each stage of development will be useful for other researchers who are designing questionnaires to assess nutrition areas previously unexplored. For example in this study conducting focus group discussions were costly in terms of time and money needed to recruit participants. This has implications for other researchers to explore alternative ways to recruit parents of preschool children. Contacting existing community groups or being invited to attend the group as a guest may be a more convenient way to recruit participants for focus groups and providing cash incentives and child care may also improve success of recruitment. Conducting individual telephone interviews with participants who were unable to attend focus groups was an excellent way to obtain individual information in this study, and may be an alternative way for other researchers who are collecting qualitative data.

Although the Manitoba Health database has the limitation of being out of date for some people, it is still the best way to obtain a random sample of parents who have preschool children compared to alternative methods of sampling (e.g., random digit dialing, recruiting from day care centres). This information is useful for other researchers who want to access a large sample of parents with preschool children.

It is concluded that the questionnaire was pilot tested on a sufficiently broad range of parents with preschoolers and is therefore appropriate to use on all parents of preschool children in Manitoba. The results obtained from the pilot study and subsequent changes made to the questionnaire ensure that the final questionnaire will provide data that will meet the research goals of the final study. The questionnaire will be useful to other researchers who might use the questionnaire in the future to measure

parents' awareness, knowledge, and beliefs about dietary fat for preschool children in Manitoba. However the questionnaire was developed for the general population of parents of preschool children in Manitoba and therefore would need revision for other populations or specific subgroups in the population (i.e., low-income groups).

Although the findings are based on a small number of parents (n=68), the preliminary results may have implications for practitioners when designing nutrition messages for consumers. Some of the main findings and suggestions for health and nutrition practitioners are suggested below.

It appears that parents are more aware of adult guidelines for fat but have limited awareness and knowledge of fat guidelines for children. These results imply that the general message that adults should eat less fat is being received by parents. It is therefore important for educators to continue to emphasize that preschoolers need fat for energy and growth and that the lower fat recommendation pertains to adults, not preschoolers.

Overall parents appear to believe that children need fat for energy, that they should not be consuming low-fat diets, that higher-fat foods are important in a preschooler's diet, and that "other" foods can be included in a healthy diet in moderation. Many parents indicated their uncertainty when asked about their beliefs surrounding how fat in a child's diet would affect future health such as incidence of overweight and heart disease. These results imply that some parents may be concerned about their child's future risk for overweight and heart disease. Educators should be aware that some parents need reassurance that preschoolers need fat for energy and growth and that the recommendation to lower fat intake pertains to adults, not preschoolers. Messages concerning the importance of healthy diets for children, how to include both lower-fat and higher-fat foods, and the importance of physical activity are important for educators to emphasize.

A portion of parents in this study were not concerned that their children ate too much fat because they have already made changes to their children's eating patterns to make them more healthy or lower in fat. On the other hand, some parents had not made changes to lower fat and worried that their children currently ate too much fat which is unhealthy. These results imply that the lower fat message intended for adults is being received by parents. Once again, it is very important for educators to reassure parents that preschoolers need fat for energy and growth and that the lower fat message is intended for adults, not young children. Educators should emphasize that young children can eat the same healthy food pattern as the rest of the family but that fat and higher-fat foods are important for young children to meet their energy needs. Messages regarding how to include both higher-fat nutritious foods and higher-fat "junk foods" from the other food group in *Canada's Food Guide to Healthy Eating* in the child's diet continue to be important.

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Appendix A:
Review of Literature- Background to Final Study

Review of Literature – Background to Final Study

Current fat recommendations for adults

In 1990, Health and Welfare Canada released Nutrition Recommendations for all healthy individuals over two years of age (Health and Welfare Canada, 1990a). Along with other recommendations for nutrients, the recommendations advised a diet providing no more than 30% of energy as total fat and no more than 10% of energy as saturated fat. This recommendation reflected the concern about the effect that dietary fat has on cardiovascular disease. The recommendation was also intended to reduce the risks of all chronic diseases including cancer and to raise the concern about an increasingly obese population in Canada, including children.

Controversy about appropriateness of low-fat diets for children

The 1990 recommendation that healthy individuals over two years of age should consume no more than 30% of energy as total fat and no more than 10% energy as saturated fat generated controversy in the medical community regarding the age at which the low-fat diet recommended for adults should be implemented in children. The statement was considered by some to be overly restrictive and, if followed by an overzealous parent, could lead to reductions in growth in children (Zlotkin, 1996).

A positive family history combined with a plasma cholesterol level in the highest decile are widely considered an indication to prescribe fat-modified diets, but this information is of little use in formulating recommendations applicable to entire populations (Satter, 2000; McGill, 1997). Evidence does exist that the arterial lesions of atherosclerosis have their origins in childhood, although the significance of fatty streaks in childhood is still unknown. Not all fatty streaks progress to plaque, and not all plaques become complicated (Olson, 2000; Hardy & Kleinman, 1994).

The recommendation that at age two the diet should consist of no more than 30% of energy as fat would constitute a significant change from the normal food patterns of growing children (Satter, 2000). There is evidence that a change in dietary habits has already occurred in North America over the past two decades (American Dietetic Association, 1999; Williams et al., 1998; Lifshitz & Tarim, 1996; McPherson et al., 1995). General population studies of U.S. children have shown mean intakes of total fat decreased to about 34-35% of calories in the 1990s (Lifshitz & Tarim, 1996; Stevens et al., 1995; Kim et al., 1990) from 38% in 1977 (Zlotkin, 1996).

Changing to a 30%-energy-from-fat diet at age two may be too abrupt a change without an obvious physiological rationale. The growth patterns and energy needs during the preschool years are highly variable as growth rate slows, activity levels are generally high, and appetite varies greatly, which results in erratic food intake (Satter, 2000; Zlotkin, 1996).

Fat is an important component in a child's diet because it supplies essential fatty acids, serves as a concentrated source of energy for the child, and acts as a carrier for fat-soluble vitamins (Jarvis & Miller, 1996). Preschoolers have limited stomach capacity but large energy needs relative to body size. Energy dense foods, which are often high in fat, enable preschoolers to meet energy and nutrient needs (Satter, 2000). Small, frequent feedings (meals and snacks) are important for meeting nutritional requirements during this phase. In the young school-age child, growth is more constant but growth patterns and energy needs continue to vary within and between individuals. Fluctuations in appetite are common, and fatigue, excitement, and vigorous activity can all interfere with food intake. Later in development, adolescents experience dramatic changes in growth and maturation. Gender differences affect energy and nutrient needs, as girls begin the maturation process approximately two years earlier than boys and have a higher proportion of body fat (Satter, 2000; Zlotkin, 1996).

Fat recommendations for children

Childhood is a time for rapid growth and change. Making sure children get enough energy as well as nutrients for proper growth and development is the number one feeding priority. With this in mind, Health Canada and the Canadian Pediatric Society reviewed the role of fat in children's diets in their report *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993).

After re-evaluating the issue of fat intake by children, they concluded that the diets of young children, which typically provide more than 30% energy as fat, should not be modified to the level recommended for adults (i.e., no more than 30% of energy as fat), since the primary concern at this age is ensuring energy and nutrient intake sufficient to achieve normal growth and development. Lower-fat diets may lack sufficient energy and some essential nutrients needed for proper growth and development.

The document *Nutrition Recommendations Update...Dietary Fat and Children* recommend that "from the age of two until the end of linear growth, there should be a transition from the high-fat diet of infancy to a diet which includes no more than 30% of energy as fat and no more than 10% of energy as saturated fat. During this transition, energy intake should be sufficient to achieve normal growth and development. Food patterns should emphasize variety and complex carbohydrate and include lower-fat foods. Physical activity should be stressed." (Health Canada, 1993, p. 5).

Evidence of young children consuming lower-fat diets

The literature shows that a subset of the preschool population is on lower-fat diets that are more appropriate for adults (Boulton & Magarey, 1995; Lapinleimu et al., 1995; McCann et al., 1994; Shea et al., 1993; Nicklas et al., 1992; Vobecky et al., 1992; McPherson et al., 1990; Pugliese et al., 1987; Pugliese et al., 1983). In addition, these low-fat diets are, in some cases, associated with poor growth (McCann et al., 1994;

Lifshitz & Moses, 1989; Pugliese et al., 1987) and inadequate intake of certain nutrients (Shea et al., 1993; Nicklas et al., 1992; Vobeckey et al., 1992; Lifshitz & Moses, 1989).

Research has shown that young children can consume sufficient amounts of energy and nutrients to sustain adequate growth while consuming a low-fat diet; however, many of these studies have been supervised by a nutritionist or dietitian, and parents have received nutrition counseling and follow-up. The Dietary Intervention Study in Children (DISC) (Writing Group for the DISC Collaborative Research Group, 1995) and the Special Turku Coronary Risk Factor Intervention Project (STRIP) in Finland (Niinikoski et al., 1997) are two examples of supervised low-fat diet trials on children and infants where the intake of energy and nutrition were sufficient.

The Dietary Intervention Study in Children (DISC) was a large randomized, controlled, clinical trial on the efficacy and safety of a dietary intervention to reduce LDL-C levels in pubescent children with elevated levels of LDL-C. The intervention group of three- to 10-year old boys and girls consumed diets of 28% calories from total fat, less than 8% from saturated fat, up to 9% from polyunsaturated fat, and less than 75mg/1000kcal per day of cholesterol. The difference in LDL-C levels between the intervention and usual care groups was not large, and the magnitude that the small change in blood lipids will have on coronary heart disease is uncertain (Writing Group for the DISC Collaborative Research Group, 1995).

The STRIP baby project also lowered fat intakes in children who were seven months to three years of age with normal blood lipids and found a long-term 3 - 6% reduction in serum cholesterol levels compared to control children (Niinikoski et al., 1997). Once again the short- and long-term impacts of this decrease in cholesterol levels is not known.

Both the DISC and the STRIP project implemented a low-fat diet for infants and children without negative effects on energy or nutrient intake and growth. However, the

safety of low-fat diets applied to the general population is difficult to assess and cannot be based on these studies since both of these trials provided nutrition counseling and follow-up which would be impractical for the general population. Despite the low-fat diet, the magnitude of change in blood lipids was minimal, and what impact the small change in lipids may have on future cardiovascular risk is uncertain. It appears that an adequate dietary intake of energy and nutrients is possible on a low-fat diet for young children, but counseling by nutritionists may be an essential element to ensure adequate nutrient and energy intake for appropriate growth.

Several studies report that infants and children who were consuming unsupervised low-fat diets were not meeting the requirements of energy and nutrients needed for growth (Gibson et al., 1993; Shea et al., 1993; Nicklas et al., 1992). Research has shown that children on lower-fat diets often have lower energy intakes compared to those with a higher fat intake (Gibson et al., 1993; Shea et al., 1993; Nicklas et al., 1992).

Gibson et al. (1993) studied Canadian preschool children (age 4-5 years) and found that the children who consumed lower-fat diets did not consume more grain products and fruits and vegetables to replace the energy lost. The authors speculated this was probably because of preschool children's small stomach capacity and limited ability to consume large amounts of high-fibre foods.

The Bogalusa heart study found that the children who consumed less than 30% of calories from fat consumed more carbohydrate than those with higher fat intakes, but this originated from sources of sugar (particularly sucrose), not complex carbohydrates (Nicklas et al., 1992). Boulton and Magarey (1995) also found that children on lower-fat diets consumed a greater proportion of energy as sugar. This raises another question of whether the energy lost when fat is restricted is replaced as protein, complex

carbohydrate, or simple sugars, and therefore the nutritional quality of the diet may be compromised depending on the source of carbohydrate.

Besides decreased energy, lower-fat diets are also often associated with inadequate intake of certain nutrients (Gibson et al., 1993; Shea et al., 1993; Nicklas et al., 1992; Vobecky et al., 1992; Lifshitz & Moses, 1989). The percentage of children not meeting the Recommended Daily Allowance (RDA) for vitamin B6, vitamin B12, vitamin E, thiamin, riboflavin, niacin, calcium, phosphorus, magnesium, and iron was higher in children with low fat intakes (less than 30% energy as fat) than those with high fat intakes (greater than 40% energy as fat) (Nicklas et al., 1992).

Children (age 4-5 years) with lower-fat diets had compromised calcium intakes attributed to lower intakes of milk and milk products (Gibson et al. 1993). Shea et al. (1993) found that children (age 3-5 years) who consumed a diet low in total fat density (less than 30% energy as fat) consumed significantly less calcium and phosphorus than children who consumed more than 30% of calories as fat. Low-fat diets in children are also correlated with a reduced intake of iron (Lifshitz & Moses, 1989; Pugliese et al., 1987).

Whether or not a lower-fat diet will be low in nutrients appears to be related to the fat-reduction strategies used by some parents. Some parents have been shown to be eliminating or severely restricting whole milk and dairy products to reduce fat rather than replacing them with lower-fat milk and dairy products (Gibson et al., 1993; Shea et al., 1993; Nicklas et al., 1992; Lifshitz & Moses, 1989).

The above studies suggest that children who are engaged in professionally unsupervised low-fat diets have an increased chance of consuming insufficient energy and nutrients, which might lead to inappropriate weight gain and growth retardation and could contribute to other nutritional deficiencies such as iron and calcium deficits

(Gibson et al., 1993; Shea et al., 1993; Nicklas et al., 1992; Lifshitz & Moses, 1989; Pugliese et al., 1987).

Although some studies have shown that children consuming diets containing less than 30% of energy from fat will not suffer growth failure if their energy content is adequate (Boulton & Magarey, 1995, Shea et al., 1993), it appears that many parents do not have sufficient knowledge about how to safely implement a lower-fat diet that is adequate in energy and nutrients (Lifshitz & Moses, 1989). The idea of promoting low-fat diets for all children without evidence of benefit may increase the risk of malnutrition in some of them (Olson, 1995).

Fat messages for adults

It is difficult to believe that parents would deliberately adopt a lower-fat diet for their children that could compromise their child's nutritional health. This raises the question of whether parents of preschool children are aware that the current guidelines for fat in children's diets are different than the recommendation for adults (i.e., no more than 30% of energy as fat).

A review of the literature identified no studies that specifically examined whether parents were aware that the fat recommendations for children are different than the lower-fat recommendations for adults. It is reasonable that the message that adults should lower fat intake may be adopted by health conscious caregivers who might then limit children's fat intake with a negative impact on growth and development. It appears that since the fat message for adults is prominent in the media, some well-meaning parents might be confused by media messages about fat and are overzealous in restricting fat for their children. This practice could inadvertently cause growth reductions in some children. Parents may think that because some fat restriction might be helpful, more would be better.

Consumers' concerns about dietary fat is at an all-time high. The proportion of shoppers concerned with fat steadily increased from 16% in 1987 to 65% in 1995 (Colavito et al., 1996). In fact, dietary fat was a source of concern for more Canadians than any other aspect of the diet (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999). The National Population Health Survey, 1994-1995, reported that 59% of people 12 years and over said they were concerned about fat in their diet and claimed to be taking action to reduce their consumption of fat. More women (67%) than men (50%) reported taking action (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999).

The 1997 Tracking Nutrition Trends study reported that even higher numbers of Canadians are concerned about fat. Seventy-nine percent reported being very or somewhat concerned about fat, and of those concerned, 95% said they act on their concern (National Institute of Nutrition, 1997). Similar to findings from the 1994-95 National Population Health Survey, the Tracking Nutrition Trends study found that more women (87%) than men (69%) were concerned about fat. Fat and sugar content of foods were found to be the strongest nutrition concerns in meal planning according to a survey of Canadian shoppers (Kerr & Commins, 1989).

From the previously mentioned studies, it seems that consumers across Canada are aware of the "choose lower fat" message and are taking steps to change their eating habits. The fact that a high percentage of women are concerned about fat in their own diets and are acting on their concern is important, because currently 86% of women say they are preparing the evening meal at home and 85% are doing the grocery shopping (Canadian Foundation for Dietetic Research et al., 1997). As well, studies have shown that fat intake, as well as the intake of other nutrients, is known to aggregate in families, with the strongest associations found between mothers and their children (Feunekes et al., 1997; Vauthier et al., 1996; Oliveria et al., 1992). If caregivers have modified their

own eating habits to bring them in line with current recommendations for fat, then likely their children will be eating the same foods.

It appears that the general message to lower fat in adults diets has been well promoted to consumers. Many consumers are aware of the link between fat and disease, report being concerned about fat, and are taking action to lower fat.

Nutrition messages for children

In 1995, Health Canada released the document *Canada's Food Guide to Healthy Eating – Focus on Preschoolers* (Health Canada, 1995). This document is based on information from the 1993 report *Nutrition Recommendations Update...Dietary Fat and Children* (Health Canada, 1993). It is intended as a basis for educators and communicators to promote healthy eating to parents and caregivers.

Canada's Food Guide to Healthy Eating – Focus on Preschoolers (Health Canada, 1995) says healthy eating is important for preschool children to: provide the energy and essential nutrients needed to grow, develop, and be active; develop their sense of taste, acceptance, and enjoyment of different foods; contribute to their sense of well-being and feeling good about themselves; and instill attitudes and practices which form the basis for lifelong health-promoting eating and activity patterns.

The healthy-eating message for children encourages enjoyment of a variety of foods, including grain products, vegetables and fruit, milk products, and meat and meat alternatives. Healthy eating gives children the energy and nutrients they need to grow, be active, and feel good.

The healthy-eating message for children also includes the enjoyment of both higher-fat and lower-fat foods. *Canada's Food Guide to Healthy Eating – Focus on Preschoolers* (Health Canada, 1995) recommends that "the same lower-fat foods as those eaten by the other family members, can be offered to preschoolers...provided their energy needs are met" (Health Canada, 1995, p. 7) and that "higher-fat foods are also

part of healthy eating...The Food Guide recommends these to be used in moderation...When applying this message to preschoolers, more flexibility is needed. Because fat is a concentrated energy source, nutritious higher-fat foods such as peanut butter and cheese help preschoolers satisfy their energy needs." (Health Canada, 1995, p. 7).

Today's parents and other caregivers are confronted with a barrage of nutrition information from a wide variety of sources, including print media, radio, television, and, more recently, the Internet. Parents are being warned about the dangers of obesity and of links between fat intake and atherosclerosis. Unfortunately, parents may respond to suggestions to limit fat intake without understanding the importance of fat in preschool children's diets and ultimately in their normal growth and development.

Evidence exists that parents are concerned about the amount of fat their children are consuming. Dunn et al. (1994) conducted a mail survey of parents with children five to eight years of age (n=662). Parents were asked to rank their interest in learning about 32 nutrition topics. Although fat was not ranked the highest in interest, 51% of parents in this survey indicated interest in knowing whether a child "gets too much fat". Although this study was conducted in the United States, it demonstrates that parents are still concerned and have interest in knowing if their children are eating too much fat.

Parental concerns about heart disease and children

A review of the literature suggests two factors that might influence the beliefs parents have about fat and disease. The factors are the family's past or present experience with heart disease and a fear of obesity. These factors might increase parents' concern about the amount of fat their children eat and subsequently the parents' use of lower-fat practices when feeding their children.

A family's past or present experience with heart disease could influence the amount of fat and cholesterol parents allow in their children's diets. There is a growing

awareness among adults that reducing high blood cholesterol levels can reduce heart disease in adults (Schwartz & Borra, 1997). The 1997 Tracking Nutrition Trends study found that most Canadians (85%) agree completely or somewhat that reducing fat in the diet can lower cholesterol in the blood (National Institute of Nutrition, 1997).

Epp-Lepa (1998) conducted focus groups with Manitoba parents of preschoolers. When asked what healthy eating for their preschooler meant to them, a few parents made comments about a low-fat diet or low-fat foods. Even though most of the parents believed that fat was important in a preschoolers' diet, a few believed that it was important to watch preschoolers' fat intakes more closely, as they felt fat was a culprit relating to several health concerns, one of which was heart disease. Several parents indicated they had made changes in their own diets to reduce dietary fat. Some parents pointed out that a high-fat diet could potentially lead to cardiovascular disease and diabetes through excess weight gain. A few of the parents also purposely limited the fat intake of their preschoolers. These parents made sure their children ate "fat-wise" and that products kept in the house were always low in fat (Epp-Lepa, 1998).

A mail survey of parents (n=277) concerning their beliefs regarding cholesterol and its effect on primary-age school children demonstrated that parents have concerns and misperceptions regarding their children's cholesterol levels (Price et al., 1994). Sixty-three percent of parents surveyed believed that 25% or more children may have high cholesterol levels, and 21% thought that it was likely their own child would develop a high cholesterol level (Price et al., 1994). Most of the parents agreed about what three main causes for high cholesterol were, including a high-fat, high-cholesterol diet, poor eating habits, and heredity factors (Price et al., 1994).

In addition to these studies, two case studies illustrate parents' concerns about heart disease for their children. Lifshitz and Moses (1989) reported on eight children with growth failure attributed to unsupervised dietary treatment of hypercholesterolemia.

The children with the growth failure were from families who had experienced more traumatic events associated with coronary heart disease, particularly heart surgery and heart attack occurring at a young age. They were also dieting to reduce high serum cholesterol levels (Lifshitz & Moses, 1989). These children had a higher mean total score of risk factors for coronary heart disease than those with normal growth.

In a second case study, Pugliese et al. (1987) identified seven children with growth failure. They found that some parents of these children were concerned about the high incidence of cardiovascular disease in their immediate family members, and therefore, the whole family was ingesting a diet low in saturated fats, red meat, and full-fat dairy products (Pugliese et al., 1987).

These two case studies are extreme examples of overzealous parents whose fears about their children's risk for disease led them to severely limit fat and energy in their children's diets, to the extent that their children suffered from failure to thrive. These studies may suggest that parents who are concerned about blood cholesterol and fat, and their effect on their children, might be more likely to make changes to reduce dietary fat for their children than parents who do not have those concerns.

Parental concerns about obesity and children

A parent's past or present weight status could be another possible factor affecting the amount of fat in a child's diet. An obese or chronically dieting parent may be especially concerned about his or her child's eating habits and see the child as at risk for obesity.

Manitoba parents of preschoolers were asked to discuss their feelings about their preschooler's weight during focus groups (Epp-Lepa, 1998). Two parents expressed concerns about high-fat diets because these diets could lead to future weight problems. One parent indicated that she had a weight problem as a child and now feeds her children low-fat foods because she is concerned that the weight problem is "in the

genes" and does not want her children to experience being teased. Another parent who was overweight as a teenager watched his child to make sure he/she ate "all right." It was not noted whether this parent was concerned about specific areas of his child's diet such as fat consumption. Other parents in the focus groups did not express concerns about their preschoolers' weight in spite of their own struggles with weight (Epp-Lepa, 1998).

Jarvis and Miller (1996) suggest that a mother's attitude toward her own diet and weight can affect the way she feeds her infant. Mothers who have a higher body weight for height tended to be more concerned about their child's weight than mothers who weighed less (Jarvis & Miller, 1996). Mothers who restrict their own fat intake might restrict their infant's dietary fat intake in a manner which compromises the nutritional adequacy of the infant's diet (Jarvis & Miller, 1996). Many of these parents were overweight as children and did not want to see their children become fat (Jarvis & Miller, 1996).

It has been demonstrated that mothers of children with nonorganic failure to thrive scored significantly higher on the restraint subscale of the eating disorder examination than the comparison group with healthy children. This subscale assesses attempts to restrict food intake and to influence shape or weight (McCann et al., 1994). McCann et al. (1994) found that despite a child's weight being at the third percentile or below, 58% of these mothers believed their children to be of normal weight or just slightly underweight, 38% perceived their child's shape as normal, and 34% stated that their child was only slightly thin (McCann et al., 1984). Despite their child's low weight, 50% of these mothers were restricting their child's intake of sweet foods, and 30% were restricting foods they considered fattening or unhealthy (McCann et al., 1994).

Pugliese et al. (1987) reported that the mother of a patient (child) with failure to thrive had been obese as a child and had dieted extensively to achieve normal weight.

This parent was very concerned that her child was becoming obese and began to dilute formula and other liquids with water (Pugliese et al., 1987). Pugliese et al. (1987) reported several parents of children with failure to thrive had been obese as children and had either lost weight by dieting or had remained overweight. These parents were concerned that their children could become obese and used feeding practices to prevent obesity such as restricting snacks and sweets, diluting formula and juices with water, restricting the children's fat intake, and relying heavily on complex carbohydrates in their children's diets (Pugliese et al., 1987). It appears that a parent's concern about their child developing heart disease or obesity could influence that parent to limit their child's intake of fat, which may or may not be detrimental to health.

Lower-fat practices used

As mentioned in the previous section, a parent's concern about their child's risk of developing heart disease or obesity can influence the amount of fat they include in their child's diet. A parent's belief that this could prevent heart disease and obesity in their child is well intentioned but might lead to the diet being inadequate in nutrients and energy, which could negatively impact on growth and development.

The majority of parents of primary grade children who responded to the mail survey (n=271) conducted by Price et al. (1994) were concerned about their child's risk of developing obesity and cardiovascular disease and were using several practices to reduce these risks. Price et al. (1994) found that, of the parents who had attempted to reduce their child's risk of developing a high cholesterol level, 73% claimed they had made lifestyle changes to reduce the child's risk, 71% changed some of the types of food they purchased, and 66% changed how they prepared some foods. As well, 46% had attempted to increase the exercise levels of their children, 38% had eliminated most high-fat foods from their child's diet, and 17% claimed they had purchased food

supplements (e.g., niacin, oat bran) for their children to help control cholesterol levels (Price et al., 1994).

A few extreme examples of parents who have severely limited fat and energy in an attempt to reduce risk of disease and obesity have been reported in the literature. One example is a report by Pugliese et al. (1987), where seven patients (4 boys, 3 girls), seven to 22 months of age were evaluated for poor weight gain and slowed linear growth. These children were only consuming 60 to 94% of the recommended caloric intake for their age and sex. Fats made up 25 to 37% of energy in the diet. The decreased caloric intake was accomplished by decreasing the volume of food consumed at all meals in all children and by decreasing snacking, using low-fat dairy products and lean meats, and not giving "junk foods." The parents were implementing diets consistent with health beliefs currently in vogue and recommended by the medical community for adults who are at risk for cardiovascular disease (Pugliese et al., 1987). These parents reported that they were restricting the children's fat and caloric intake out of a concern that the children would become obese, develop arteriosclerosis, become "junk-food" dependent, or develop eating habits that the parents believed were unhealthy (Pugliese et al., 1987).

This is an extreme example of how parents' concerns about preventing obesity and disease lead to a severe restriction of fat and energy. There is however, limited information on specific practices parents are using to decrease fat consumption for their preschool children. Most studies report macro and micro nutrient intakes rather than particular practices used by parents. It appears that several practices are used by parents to reduce the fat in their children's diets. As mentioned previously, the majority of adults are concerned about fat for themselves and report taking steps to reduce fat. This suggests that if caregivers have modified their own eating habits to reduce fat, then their children's eating habits likely follow the same pattern.

Four common categories are reported in the literature as the practices parents use to reduce fat in their own diets and that of their children. These four categories include: 1) using lower-fat alternatives instead of higher-fat foods, 2) using specially manufactured fat-reduced products instead of their higher-fat counterparts, 3) using lower-fat preparation techniques instead of higher-fat ones, and 4) limiting or excluding certain higher-fat foods.

1. Using lower-fat alternatives instead of higher-fat foods.

Canadians surveyed in the 1997 Tracking Nutrition Trends study reported the measures they were taking because of their concern about fat. Several measures mentioned can be considered as using lower-fat alternatives instead of higher-fat ones. These include eating leaner meats, lower-fat foods, lower-fat milk, cheese, ice cream and yogurt, and substituting fish or chicken for other meats (National Institute of Nutrition, 1997). Using only low-fat dairy products appears to be another common practice used by some parents (Pugliese et al., 1987).

2. Using specially manufactured fat-reduced products instead of their higher-fat counterparts.

Epp-Lepa (1998) found some parents were purposely limiting the fat intake of their preschooler's diets to make sure their children ate "fat-wise" products and that products kept in the house were always low in fat. Examples of specially manufactured fat-reduced products include products like lower-fat cheese, processed meats, dressings, mayonnaise, and peanut butter. Adults surveyed in the 1997 Tracking Nutrition Trends study also reported buying lower-fat products such as cheese, ice cream, and yogurt (National Institute of Nutrition, 1997).

3. Using lower-fat preparation techniques instead of higher-fat ones.

Common lower-fat preparation practices reported included trimming fat off meat, using non-stick pans rather than frying, using less fat in cooking, taking skin off chicken, and draining cooking fat (National Institute of Nutrition, 1997).

4. Limiting or excluding certain higher-fat foods.

Limiting or excluding certain foods appears to be one way parents attempt to reduce fat for their children. Foods that are often limited or excluded include snack foods like chips, sweets, simple sugars, and "junk food" (Epp-Lepa, 1998; Pugliese et al., 1997; McCann et al., 1994); fried foods, meat and nuts (McCann et al., 1994); and eggs (Lifshitz & Moses, 1989). In particular, the limitation or avoidance of "junk food" appears to be something parents are doing for many reasons.

In focus groups conducted by Epp-Lepa (1998), parents of preschoolers were asked "When you think of healthy eating for your preschooler what sort of things come to mind?" In response to this question, several parents commented on limiting "junk foods" (Epp-Lepa, 1998). In these three focus groups the distinction between "good food" and "junk food" was clear (Epp-Lepa, 1998). To decrease consumption of foods perceived to be "junk foods," some parents would not keep the foods in the house and other parents would use moderation and allow their preschoolers to eat only a small amount of these foods at a time. Some parents allowed virtually no sugary or high-fat foods into their homes, and other parents had these foods available but would carefully monitor the amount their preschoolers ate, allowing only small amounts at a time (Epp-Lepa, 1998). Foods that are reportedly avoided or limited by Canadians in the Tracking Nutrition Trends study included processed meats, fatty foods, fried or fast foods, desserts, and candy bars (National Institute of Nutrition, 1997).

A review of the literature identified no studies that specifically examined the question of why parents are adopting lower-fat diets that may compromise their children's health. It appears however, that some parents who mean well are confused

by media messages and may be inadvertently malnourishing their infants and children, because of a fear they may become overweight or develop a lifestyle leading to heart disease (Jarvis & Miller, 1996). Too often people think that because some fat restriction may be helpful, more may be better. In several cases of failure to thrive, the growth failure has been attributed to parents' overzealous application of adult, low fat, low cholesterol dietary guidelines to children and infants (McCann et al., 1994; Lifshitz & Moses, 1989; Pugliese et al., 1987; Pugliese et al., 1983).

Factors relating to health behaviours, knowledge, and beliefs

Socio-Economic Status

Research suggests that higher socio-economic status is associated with more positive health behaviors and knowledge. The demographic variables that are most consistently shown to be positively associated with health knowledge are income and education level. Education is the component of socio-economic status which most strongly influences peoples' health habits and practices (Norman, 1986) and has been shown to be the most important predictor of knowledge scores (Levy et al., 1993).

Canada's 1990 Health Promotion survey found that attitudes about diet and nutrition had a strong positive relationship to income, education, and occupation for those 25 to 64 years of age (Health and Welfare Canada, 1993). Negative attitudes about nutrition were most common among persons of low-income, with little education, and to a somewhat lesser extent, working in blue collar occupations (Health and Welfare Canada, 1993). Persons of higher socio-economic status are more knowledgeable and express more cautious attitudes about smoking, nutrition, and high blood pressure (Health and Welfare Canada, 1993). The 1990 survey showed that people with socio-economic advantages are able to practice health behaviors that avoid or reduce the risk of illness, exercise greater control over their own lives, and make deliberate lifestyle changes to improve health (Health and Welfare Canada, 1993), while groups with the

lowest education and income encounter more barriers to increased intake of nutritious food such as fruits and vegetables (Dittus et al., 1995). Other positive health practices such as breast feeding, wearing seatbelts, and being a non-smoker are positively associated with level of education, income adequacy (among women), and managerial or professional occupations (among men) (Health and Welfare Canada, 1993).

Knowledge and beliefs about heart disease appear related to education, employment, and income. Canada's 1990 Health Promotion survey found that people with greater affluence, more education, and higher status jobs were more aware of the main causes of heart disease, with women exceeding men at every comparable level of education, occupation, and income (Health and Welfare Canada, 1993). Another study found that parents of primary school-aged children from higher socio-economic households were more likely to use more fat-reduction strategies and to have parental beliefs about the benefits of restricting fat in childhood to prevent chronic diseases later in life (Price et al., 1994).

Canada's 1985 Health Promotion survey (Health and Welfare Canada, 1988) asked respondents if there were any foods in general that should be limited or avoided. Of the 64% who said yes, foods high in cholesterol, fat, sugar, and salt were mentioned as foods people should limit or avoid. Women, those under 65 years, and those with post-secondary education were most likely to say yes to the question (Health and Welfare Canada, 1988).

Geographic Location

Research on rural/urban effects on nutrition beliefs and knowledge is quite limited at this point, but it appears that living in rural areas may have an effect on the amount of fat in one's diet. The Manitoba Heart Health Survey conducted in 1989-1990 on adult residents of Manitoba aged 18 to 74, found that people in rural areas of

Manitoba consumed a higher proportion of energy as fat compared to people living in Winnipeg and regional areas (Sevenhuysen et al., 1993).

The effect of rural/urban residence on nutrition knowledge and beliefs also may be affected by education level and socio-economic status. Gates and Campbell (1982) found that mothers who resided in the city of Winnipeg were more likely to have a university education than non-Winnipeg urban or rural residents and a higher socio-economic status (61.2%) than mothers residing in a non-Winnipeg urban (17.6%) or rural centre (21.2%). Main wage earners with a higher occupational status were more likely to reside in a metropolitan area (Winnipeg) (60.8%) than a rural setting (45.1%). Mothers who resided in Winnipeg (50%) and other non-Winnipeg urban (30.6%) areas were more likely to be employed full-time than were rural respondents (19.4%). From Gate's and Campbell's (1982) research it appears that those living in urban centres, such as Winnipeg, may have higher education attainment and socio-economic status than those living in rural or non-Winnipeg urban areas. As mentioned previously, socio-economic status, particularly income and education levels, are positively associated with health knowledge and behaviours (Norman, 1986).

From the above studies it appears that the effect of rural or urban status may be an effect of higher socio-economic status as measured by education, employment, and occupational status.

First-Time Parent Status

There is some evidence suggesting that whether parents are first-time parents or not will affect the amount of information they seek about nutrition for their children. In focus groups of parents of preschoolers discussing how parents interpret nutrition messages, almost all of the parents claimed to read avidly about nutrition when their first child was born (Epp-Lepa, 1998). Reid (1996) also found that first-time parents were more likely to participate in infant nutrition classes than those who already had children.

Age of parents

In the Tracking Nutrition Trends study (National Institute of Nutrition, 1997) there was a trend for the proportion of respondents considering nutrition very or extremely important to be higher for the 35 to 54 year old group (66%) than the 18 to 34 year old group (55%). Age was also related to concern with and practices used in relation to fat. There appeared to be a trend for younger respondents who are 18 to 34 years of age to be less likely to specify reduction of fat when preparing foods (32%) than those who are 35 to 54 (40%) (National Institute of Nutrition, 1997). The differences appear small, but the results of this study suggest that older adults consider nutrition more important than younger adults and are more likely to practice positive nutrition behaviours.

Reid (1996) reported a trend for parents participating in infant nutrition classes in Winnipeg to be older (30 or older) than the non-participants. Although this association was not significant, it suggests that older parents may be more likely to seek out information.

Age may affect a parent's awareness, understanding, and application of dietary fat recommendations for their children. However, the effect of age may be compounded by other variables such as first time parent status, education, and socio-economic status. As discussed previously, first-time parents may be more likely to be information-seekers (Reid, 1996).

Gender of the Child

There is very limited information about what effects, if any, the gender of a child has on parents' nutrition knowledge and beliefs. Two studies have been found that suggest parents have different beliefs about their children's weight depending on the gender of the child.

In a study by Costanzo and Woody (1984), parents from a farming and factory community who had children of varying weight status in grades two to five were

administered a structured interview. For girls, being overweight (as measured by deviation from average weight for age and height) was associated with more displeasure with oneself, whereas for boys, being overweight was associated with less exercise, less emotionality, and less social involvement. Although the results were preliminary, due to the small number of subjects and a large number of variables, the authors suggested that possibly the parents of obese girls were more inclined to see the obesity as a problematic, emotionally-driven eating behavior and to assume an active role in restraining and directing that behavior. Parents of obese girls are likely to attribute the children's weight problems to lack of self-control and therefore attempt to instill such self-control (Costanzo & Woody, 1984).

The accuracy of parents' perception of their children's weight was compared to children's actual percentage of body fat in a study by Sisson et al., 1997. Parents of children between the ages of nine and 15 were asked to rate their children's weight as too thin, too fat, or just right. Parents were more accurate in their perception of obesity in their daughters (88%) than in their sons (52%). The authors felt that these parents were perpetuating the greater aesthetic value that contemporary society places on thinness for women (Sisson et al., 1997).

The children studied in these articles were older than preschool age, but the articles were suggestive that parents may view weight in girls differently than in boys. The relationship between the gender of the preschool child and parents' awareness, knowledge, and beliefs about the role of fat in preschoolers' diets and the use of practices to lower fat is worth further exploration.

Summary and conclusions

To summarize what has been reported in the literature, it appears that despite the current recommendation by Health Canada not to restrict fat in young children's diets, a subset of preschool children are currently consuming low-fat diets that are more

appropriate for adults (i.e., no more than 30% of energy as fat). Research has shown that these lower-fat diets, in some cases, can be associated with poor growth and inadequate intake of certain nutrients by preschoolers.

Although there were no studies that could be found to address why parents would adopt low-fat diets that may compromise their children's nutritional health, it appears that since the fat message for adults is prominent in the media, some health-conscious, well-meaning parents might be confused by these media messages and are misapplying the lower-fat message, intended for adults, to their children. Limiting fat may have a negative impact on growth and development in some children if energy and nutrient intakes are not sufficient.

Parents' beliefs about fat and concern that their children are at risk for disease or obesity, might be important factors that influence practices used to lower fat consumption by their children. Parents who are concerned about their children's risk of developing cardiovascular disease or obesity might be more likely to limit fat in their children's diets as a preventative measure.

There may also be a possible influence of a family's past or present experiences with heart disease. The literature has shown that the families who had experienced more traumatic events related to heart disease (e.g., heart attack, bypass surgery, etc.) or who have more risk factors for heart disease (e.g., increased blood lipid levels, hypertension, etc.) may be fearful of their children developing heart disease and may use more fat-reduction strategies in an attempt to prevent their children from developing heart disease in the future.

Whether or not parents were overweight as children or are overweight now may affect their beliefs about fat and their child-feeding practices. These parents may have a greater concern about their children becoming overweight and may use different child-feeding practices than parents who do not have weight concerns. Some studies have

shown that parents are fearful of their children becoming obese and may use more restrictive feeding practices including using more fat-reduction strategies.

Four common categories of parental practices to reduce fat in their own diets and that of their children have been reported in the literature. These four categories include: 1) using lower-fat alternatives instead of high-fat foods (e.g., lean meats, low-fat dairy), 2) using specially-manufactured fat-reduced products instead of their higher-fat counterparts (e.g., fat-reduced dressings, mayonnaise, cheese), 3) using lower-fat preparation techniques instead of higher-fat ones (e.g., baking or broiling, trimming fat from meat) and 4) limiting or excluding certain higher-fat foods (e.g., chips, chocolate). Awareness, knowledge, beliefs, and application of current guidelines for dietary fat in children's diets also may be positively related to socio-economic status. Age of parent, rural/urban residence, first-time parent status, and the gender of the child are variables that remain to be explored. Based on findings reported in the available literature, they might have an impact on parents' awareness, understanding, and application of dietary fat recommendations.

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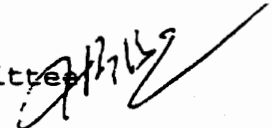
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Appendix B:
Ethical Approval for Focus Group Research

THE UNIVERSITY OF MANITOBA

Inter-Departmental Correspondence

Date 8 April 1999
To Dr. Marian Campbell and Ms Holly Milton
From Dr. John Bond, Human Ecology Ethics Review Committee
Subject Ethics Submission, #9906



Thank you for your quick response to the changes requested in your proposal "A focus group study on the awareness, understanding and application of dietary fat recommendations by parents of preschoolers."

With these modifications, this proposal now meets the ethical guidelines for research with human subjects.

The Ethics Review Committee approves the proposed research procedures for implementation.

Appendix C:
Letter to Potential Participants (Focus Groups)



THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
DEPARTMENT OF FOODS AND NUTRITION

Human Ecology Building
Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-9901
(204) 474-7592 FAX

April 19, 1999

Dear Parent,

The Faculty of Human Ecology at the University of Manitoba is interested in talking to parents about feeding preschool children. It's surprising that very little information is known about parent's opinions about feeding their preschool children. Parent's opinions are needed in improving information given to other parents like you who care about feeding their children.

If you are the parent of a child 2-3 years of age and would like to exchange ideas on feeding preschool children then please join me in a discussion over refreshments with other parents. The discussion will be small (8-10 parents), casual and will last about 1 to 1 ½ hours. The discussion will be held on **May 12th 1999 at the Day Nursery from 4:00 until 5:30**. Childcare will be provided. If this day is not suitable then another day can be arranged. Please consider coming out and sharing your thoughts and experiences with other parents of preschoolers. Together, we can work to increase our knowledge about "Feeding Preschoolers".

If you are interested in receiving a telephone call about the project, please write your name and phone number on the "Feeding Preschoolers Calling List". For more information, please call Holly Milton @ 837-2022 after May 2nd. Please leave a message and Holly will return your call as soon as possible.

Your participation is voluntary, but I would be most grateful if you would agree to help me with this project. Thank you for your time and consideration.

A handwritten signature in cursive script that reads "Holly Milton".

Holly Milton
(Graduate Student)

Appendix D:
Supporting Letter for Focus Group One



THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
DEPARTMENT OF FAMILY STUDIES
Child Development Centre

Human Ecology Building
Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-8055 VOICE
(204) 474-7592 FAX

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April 12, 1999

Dear Parent;

The Child Development Centre at the University of Manitoba has agreed to cooperate in the research investigation entitled, "A focus group study on the awareness, understanding and application of dietary fat recommendations by parents of preschoolers", being conducted by Holly Milton, a graduate student in the Faculty of Human Ecology. Our participation is limited to providing access to parents who were registered in the 1998-1999 session.

Your participation in the research is completely voluntary and you may withdraw from the study at any time. As well, your identity will not be revealed and all information gathered in the project will be kept strictly confidential.

Attached is a letter from Ms. Milton which further describes the project and how you can participate. Please don't hesitate to contact me if you have any questions or concerns.

Thank you for your consideration of this request, and have a great summer.

Sincerely yours,

A handwritten signature in cursive script that reads "Sharon Balasko".

Sharon Balasko
Director, Child Development Centre

Appendix E:
Moderator's Guide and Demographic Questionnaire

Moderator's Guide I

Good morning and welcome. Thank you for taking the time to join me in this discussion on feeding preschoolers. My name is Holly Milton and I will be the moderator for today's discussion. I am a graduate student from the Department of Foods and Nutrition at the University of Manitoba.

I want to hear parents' opinions and ideas on feeding preschool children. Everyone here is the parent of at least one preschool child and we're going to talk about feeding preschoolers. The discussion will be audio-taped and will last about 1 to 1 ½ hours. No names will appear on the typed copies of the tape. Only myself, my advisor, Dr. Marian Campbell and the person hired to transcribe will hear the audio-tape or read the typed copy of the tape. The tapes and transcripts will be destroyed or erased within five years of this project's completion.

If you were willing to participate in this discussion, I would like you to read and sign the consent form. Are there any questions regarding the form? (Forms are singed and handed in).

All right, now we can get on with the discussion. Today we'll be discussing your thoughts and ideas on feeding preschoolers. Remember that you are the expert about your children and your beliefs about nutrition and I would like you to share your perspectives and thoughts with me. I would like to stress that there are no 'wrong' answers to any of these questions but perhaps differing points of view. Also, I would like to comment that a consensus is not necessary, if you have an opinion or thought that is different from everyone else's then we'd like to hear it.

Before we begin, let me suggest some things that will make our discussion more productive. I would like to ask everyone to speak in a clear voice and that only one person should talk at a time. I'm tape recording the discussion because I don't want to miss any comments. We may use first names during our discussion but no names will appear on the tape.

My role here is to ask questions and listen. I won't be participating in the conversation, but I want you to feel free to talk with one another. I'll be asking a number of questions and will be moving the discussion along.

During our discussion I may move you along from a topic or point before you are ready. At the end we will have time to discuss other items in more detail if you wish. Also at times I'll be asking everyone a question and at other times I will leave the question open-ended when anyone is free to answer. If you have nothing to say at any point during the discussion you can pass.

First of all, I would like everyone to tell us their first name (use name-cards) and how many children you have and their ages.

First of all I would like everyone to write down a few points about what are some of your concerns and issues you have with feeding you preschool child. (give participants time to write down points)

May I begin the tape now?

1. In response to the question "What are some concerns and issues you have with feeding your child?" I will ask everyone to read the most important one they have put down on their list.

Probe: Anything else?

2. A few of you mentioned fat, what is it that concerns you?
Or "No one here has mentioned fat, is that a concern for anyone?"

Probe: What concerns you the most about fat
Family history of heart disease, obesity
Current risk of heart disease, obesity
What do other people think of that? (invite others to be involved)
Is it something that concerns you too?
Why did some people not mention it as a concern?

3. Can you give me examples of things that you do regarding your concern about fat?

Probe: Switching foods to lower fat
Eliminating foods
Cutting back on foods
What do other people think about that? (invite people to comment on other people's comments)

4. Are there any differences about the way you make decisions about fat in your and your spouse's diet and in your child's diet?

Probe: What is different
Purchase different foods
Sources of information

5. How important is fat to you when thinking about your preschoolers' eating pattern?

Holly will say "The main points I have heard today are _____. Have I missed anything?
Stop the tape.

Ask people why they agreed to participate today?
How would they respond to my recruitment letter I will send out prior to my phone survey? Would they have any suggestions for change?
How do parents react to questions about fat? (some sample questions from my questionnaire or feelings about the discussion we just had)

"Thank you very much for your participation in this study. Before you go will you please fill out this fact sheet. It gives me a bit of information about each of you so we have a general idea of who has taken part in our focus group."

(After the tape has stopped, discuss briefly with parents what is the current Canadian Recommendations for fat for children are and answer any other questions they may have.)

Moderator's Guide II

Good morning and welcome. Thank you for taking the time to join me in this discussion on feeding preschoolers. My name is Holly Milton and I will be the moderator of today's discussion. I am a graduate student from the Department of Foods and Nutrition at the University of Manitoba.

I want to hear parents' opinions and ideas on feeding preschool children. Everyone here is the parent of at least one preschool child and we're going to talk about feeding preschoolers. The discussion will be audiotaped and will last about 1 to 1 ½ hours.

No names will appear on the typed copies of the tape. Only myself, my advisor, Dr. Marian Campbell and the person hired to transcribe will hear the audiotape or read the typed copy of the tape. The tapes and transcripts will be destroyed or erased within five years of this project's completion.

If you were willing to participate in this discussion, I would like you to read and sign the consent form. Are there any questions regarding the form? (Forms signed and handed in).

All right, now we can get on with the discussion. Today we'll be discussing your thoughts and ideas on feeding preschoolers. Remember that you are the expert about your children and your beliefs about nutrition and I would like you to share your perspectives and thoughts with me. I would like to stress that there are no 'wrong' answers to any of these questions but perhaps differing points of view. Also, I would like to comment that a consensus is not necessary, if you have an opinion or thought that is different from everyone else's then we'd like to hear it.

Before we begin, let me suggest some things that will make our discussion more productive. I would like to ask everyone to speak in a clear voice and that only one person should talk at a time. I'm tape recording the discussion because I don't want to miss any comments. We may use first names during our discussion but no names will appear on the tape.

My role here is to ask questions and listen. I won't be participating in the conversation, but I want you to feel free to talk with one another. I'll be asking a number of questions and will be moving the discussion along.

During our discussion I may move you along from a topic or point before you are ready. At the end we will have time to discuss other items in more detail if you wish. Also at times I'll be asking everyone a question and at other times I will leave the question open ended when anyone is free to answer. If you have nothing to say at any point during the discussion you can pass.

First of all, I would like everyone to tell us their first name (use cards) and how many children you have and their ages.

First of all I would like everyone to write down a few points about what comes to their mind when they think of healthy eating for their families. (give participants time to write down points)

May I begin the tape now?

1. When you think of healthy eating for your family what kind of things come to mind? Ask first person what they put on their list and then ask other people to add to it.

Probe: Is there anything else anyone can add?

2. A few of you mentioned fat, what is it that concerns you?
Or "No one here has mentioned fat, is that a concern for anyone?"

Probe: What concerns you the most about fat
Family history of heart disease, obesity
Current risk of heart disease, obesity
What do other people think of that? (invite others to be involved)
Is it something that concerns you too?
Why did some people not mention it as a concern?

3. Can you give me examples of things that you do regarding your concern about fat?

Probe: Switching foods to lower fat
Eliminating foods
Cutting back on foods
You mentioned "junk foods", can you elaborate?
You mentioned "good and bad foods", can you elaborate?

What do other people think about that? (invite people to comment on other people's comments)

4. Are there any differences about the way you make decisions about fat in your and your spouse's diet and in your child's diet?

Probe: What is different
Purchase different foods
Sources of information
You mentioned you use common sense when feeding your child, can you be more specific?

5. How important is fat to you when you think of your preschool child's eating pattern?

Probe: You mentioned you use common sense when feeding your child, can you be more specific?

Holly will say "The main points I have heard today are____. Have I missed anything?
Stop the tape

Demographic QuestionnaireFocus Group #
ID# _____

Please place a check mark beside the appropriate responses.

1. I have _____ number of children.
2. I am: _____ Employed full time
_____ Employed part time
_____ A college or university student
_____ Not employed outside of the home
3. My age is:
_____ Under 20
_____ 20-29 years
_____ 30-39 years
_____ Over 40
4. The highest level of education I have completed is:
_____ Less than grade 12
_____ Grade 12
_____ Trade School/some University
_____ University degree
5. My family's income before taxes is:
_____ Under \$25,000
_____ \$25,000 to \$49,000
_____ Over \$50,000
6. In your family who is primarily responsible for deciding what your child eats?
_____ Mother
_____ Father
_____ Mother/Father
_____ Other (please explain)

Appendix F:
Individual Interview Guide

Individual Interviews

Hello may I please speak to (name). It's Holly Milton calling from the University of Manitoba. I want to thank you for taking time to talk to me today.

I want to hear your opinions and ideas on feeding preschool children.

Our discussion today will be audio-taped and will last about ½ hour. Your name or that of your child will not appear on the typed copies of the tape. Only myself and my three committee members will read the typed copy of the tape.

The tapes and transcripts will be destroyed or erased within five years of this projects completion.

Your participation in this discussion is completely voluntary. Do you have any questions?

Are you willing to participate in this discussion?

All right, now we can get on with the discussion. Today we'll be discussing your thoughts and ideas on feeding preschoolers. Remember that you are the expert about you children and your beliefs about nutrition and I would like you to share your perspectives and thoughts with me. I would like to stress that there are no 'wrong' answers to any of these questions.

May I start the tape now?

Once the tape is running say "now that the tape is running I just want to confirm that you agreed to participate in this interview and that you agree to have it taped"

1. First of all, when I mention dietary fat and feeding your family what comes to your mind?

Probe: Child
Adults
Meals
Snacks

2. Can you give me examples of things that you do regarding your concern about fat?

Probe: Switching foods to lower fat
Eliminating foods
Cutting back on foods

3. Are there any differences about the way you make decisions about fat in your and your spouses' diet and in your child's diet?

Probe: What is different
Purchase different foods
Sources of information

4. What concerns you the most about dietary fat?

Probe: Children versus adults

Family history of heart disease/obesity

Current risk of heart disease/obesity

6. What do you think the role of fat is in family meals?
7. Why do you think fat is important in your preschoolers diet?
8. How important is fat to you when you think of your preschool child's eating pattern?

Holly will say "The main points I have heard you say today are ____, Have I missed anything? Do you have anything else to add?"

Stop the tape

Debrief on the current Canadian recommendations for fat in preschoolers' diets and answer any questions.

"Thank you very much for your time to help me with this study"

Appendix G:
First Draft of Preliminary Questionnaire
(Submitted to Expert Panel)

Subject ID # _____

Hello my name is _____ from the University of Manitoba. Did you receive our letter about the study on dietary fat and feeding preschoolers?

In the letter we described a Manitoba wide study of what parents think about dietary fat and feeding their preschoolers. I would like to ask you some questions about this topic over the phone. It should only take about 15 minutes. Your participation is voluntary. You can refuse to answer any question or can stop the interview at any time. Your answers will be kept strictly confidential. Do you have any questions about the study?

We would like to talk to the person primarily responsible for feeding your preschooler. Would that be you?

yes	.....1
usually	.....2
no	.....3

(IF NO), Could I speak to the person who is primarily responsible for feeding your preschooler.

(ONCE YOU HAVE THE PERSON WHO IS PRIMARILY RESPONSIBLE REPEAT ABOVE)

Are you willing to participate?

yes	.....1
no	.....2

(IF NO GO TO NON RESPONDER QUESTIONNAIRE)

(IF INCONVENIENT TIME ARRANGE CALLBACK TIME)

RECORD TIME AND DAY _____

What is the name of your preschool child? _____

Is (NAME OF CHILD) presently on a special diet prescribed by a Doctor or Dietitian?

Yes	.....1
No	.....2
Don't know	.....9

(IF YES), What is the special diet?

Weight Reducing	.....1
Diabetic	.....2
Allergies	.....3
Low blood sugar	.....4
Hyperactivity	.....5
Low fat/heart disease	.....6 (EXCLUDE FROM STUDY – READ BELOW)
Other (specify) _____	.....7
Don't know	.....9

I'm sorry, since (NAME OF CHILD) is on a low fat diet we are unable to include him/her in the study. We are interested in children who do not have special fat restrictions.

Is (NAME OF CHILD) on a vegetarian diet?

yes	.....1
No	.....2
Don't know	.....9

What type of vegetarian diet is (NAME OF CHILD) on?

Ovo-lacto	.....1
Ovo	.....2
Lacto	.....3
Vegan	.....4 (EXCLUDE FROM STUDY)
Semi-vegetarian (no red meat)	.....5
other (specify) _____	.....6

(IF VEGAN) I'm sorry we will be unable to include (NAME OF CHILD) in the study because many of the questions pertain to animal food products.

Does he/she have any medical problems that affect his/her growth or make eating difficult? (E.G. CEREBRAL PALSY, SEE TRAINING MANUAL)

Yes	.....1
No	.....2
Don't know	.....9

I am sorry then, we are unable to include (NAME OF CHILD) in the study. We are interested in children who do not have medical problems that make eating difficult.

Now we can move onto the questions about feeding preschool children. As I mentioned I'll be asking questions about feeding preschool children, about your thoughts about fat in preschool children's diet and your use of lower and higher fat foods.

1. First of all, are you aware of any guidelines on what fat intake should be for preschoolers?

Yes (**GO TO 2**)1

No (**GO TO 3**)2

No response (**GO TO 3**)9

Not sure8 **PROBE:** What's on your mind?
What are you thinking?

(GO TO QUESTION 2 OR 3 DEPENDING ON RESPONSE)

2. What do the guidelines say?
PROBE: Is there anything else you have to add?

(RECORD RESPONSE)

OFFICE USE ONLY

Parents should allow their preschooler to consume	.....01
a higher proportion of fat when they are younger than adults	
Fat should not be restricted in preschool years	.....02
Preschoolers should consume higher fat diets than the <30% energy as fat recommended for adults	.....03
There should be a gradual transition to a lower fat diet as children grow	.....04
Preschool children should consume low fat diets	.....05
Low fat diets are good for preschoolers to prevent heart disease	.....06
Low fat diets are good for preschoolers to prevent obesity	.....07
Other (specify) _____	.....08
Other (specify) _____	.....09
Other (specify) _____	.....10
Don't know	.....88
No Response	.....99

3. Are you aware of any guidelines on what fat intake should be for adults?

Yes (GO TO 4)1
 No (GO TO 5)2
 No response (GO TO 5)9
 Not sure8

PROBE: What's on your mind?
 What are you thinking?

(GO TO QUESTION 4 OR 5 DEPENDING ON RESPONSE)

4. What do the guidelines say?
PROBE: Is there anything else you have to add?

(RECORD RESPONSE)

OFFICE USE ONLY	
Adults should lower their intake of fat	.....01
Adults should eat less than 30% of calories as fat	.....02
Adults should eat less saturated fat	.....03
Adults should eat less than 10% of calories as saturated fat	.....04
Adults should lower the amount of cholesterol they consume to 300mg/day	.....05
Adults should reduce the amount of cholesterol they eat	.....06
adults should cut out fat from their diet	.....07
Adults should cut out cholesterol from their diet	.....08
Other (specify)	.....09
Other (specify)	.....10
Other (specify)	.....11
Don't know	.....88
No Response	.....99

5. Next I am going to read 9 statements about what parents may believe about fat in children's diets. Please tell me if you agree or disagree with the statements, or if you are uncertain. **(CIRCLE A,D,U)**

a)	Preschoolers should eat a higher proportion of fat than recommended for adults. Do you agree, disagree, or are you uncertain?	A	D	U
		1	3	2
b)	Parents should let their preschoolers eat a greater proportion of their diet as fat than adults. Do you agree, disagree, or are you uncertain?	A	D	U
		1	3	2
c)	Parents should worry about fat in their own diets but not in their preschooler's diet.	A	D	U
		1	3	2
d)	Parents should gradually lower the proportion of fat in kid's diets as they get older.	A	D	U
		1	3	2
e)	When a child is done growing they should be eating the same proportion of fat in their diets as recommended for adults	A	D	U
		1	3	2
f)	Children should reduce the proportion of fat in their diets when they are done growing	A	D	U
		1	3	2
g)	Parents should keep the amount of fat that preschoolers eat as low as possible.	A	D	U
		1	3	2
h)	Preschool children should eat diets low in fat.	A	D	U
		1	3	2
i)	Preschoolers do not need to be on a diet that is low in fat.	A	D	U
		1	3	2

6. Next I will read you pairs of foods. For each pair tell me which one of the foods is higher in fat.

Food	Lower fat	Higher fat	Not sure/uncertain
<u>Peanut butter</u> (regular) or jam			
<u>Homo milk</u> or 1% milk			
Pasta with tomato sauce or <u>Kraft dinner</u>			
<u>Cheddar cheese</u> or cottage cheese			
Fruit roll ups or <u>chocolate bar</u>			
<u>Hot dogs</u> (regular) or regular hamburger			
<u>Potato chips</u> or baked potato			
Banana or <u>regular pudding</u> (like chocolate)			
Frozen yogurt or <u>ice cream</u>			
<u>Donut</u> or bagel			
Ham or <u>salami</u>			

7. Now I will list 12 foods that parents may feed their preschooler. These foods come in both regular forms and lower fat forms. Please tell me if you purposely serve your preschooler the lower fat form of each food, and if you always, sometimes or rarely use it. By lower fat I mean words like "light, low fat, fat free, fat wise" that may appear on the label. If I mention a food you don't serve, or your child doesn't eat, please let me know.

Do you serve **(READ STATEMENT)**?

Do you always, sometimes, rarely or never serve it?

Food	Don't know	Doesn't Use/eat	frequency			comments note allergy or special diet
			always	som etim es	Never rarely	
Let's start with milk Do you serve lower fat milk like skim or 1%?						
Do you serve the lower fat type of peanut butter?						
Do you serve the lower fat kind of pudding?						
Lower fat kind of cream cheese?						
Lower fat kinds of salad dressings or mayonnaise?						
Lean ground beef?						
Lower fat margarine?						
Lower fat cheese slices or cheese spread?						
Do you serve the lower fat or baked kind of crackers?						
Lower fat luncheon meat?						
Lower fat wieners or hot dogs?						
Lower fat frozen dairy desserts like frozen yogurt, ice cream or ice milk?						

8. Next I will mention 12 practices parents may use when serving or preparing food for their preschoolers. Please tell me if you do them always, sometimes, rarely or never. Again, let me know if I mention something that doesn't apply to you or your preschooler.

Do you: **(READ STATEMENT)** for your preschooler? Always, sometimes, never or rarely?

Practice	Doesn't Use/eat	Frequency			Comments (note: allergy, diet)
		Always	Sometimes	Rarely	
Remove the skin from chicken					
Drain fat from meats					
Trim fat from meats					
Skim fat from gravy					
Bake or broil instead of frying					
Use cooking spray (pam)					
Use non stick pans					
Serve muffins/breads without butter or margarine					
Serve vegetables without butter or margarine or cream sauces					
Replace fat in baking with fruit, applesauce, yogurt					
Use skim or 1% milk instead of whole milk or cream in cooking					
Cut down on dairy foods					
Cut down on meat					

9. Now I will read several statements about preschoolers and fat in their diets. Please tell me if you agree, disagree or are uncertain about each statement. (CIRCLE A,D,U)

a)	Because preschoolers are so active and growing they need to eat a greater proportion of fat in their diets than adults	A 1	D 3	U 2
b)	The amount preschoolers eat can vary from day to day, so higher fat foods are important to meet their calorie needs	A 1	D 3	U 2
c)	Preschoolers have small stomachs and can't eat a lot at one sitting, so it would be difficult to meet their need for calories if fat was limited in their diet	A 1	D 3	U 2
d)	Because preschoolers have small appetites, fat is important in their diets to meet caloric needs.	A 1	D 3	U 2
e)	Because preschoolers are so active and growing it would be difficult to meet their calorie needs if fat was limited in their diet	A 1	D 3	U 2
f)	Preschoolers have small stomachs and can't eat a lot at one sitting, so they need to eat more higher fat foods	A 1	D 3	U 2
g)	Including higher fat foods in a preschooler's diet is important because little kids need the calories to grow and be active.	A 1	D 3	U 2
h)	Preschoolers have small stomachs and can't eat a lot at one sitting, so fat is important in their diet to get enough calories	A 1	D 3	U 2
i)	Higher fat foods are important in a preschoolers' diet because they are picky eaters and eat small amounts of food.	A 1	D 3	U 2

10. The next group of 6 foods I will read are all higher fat foods that preschoolers usually like. Please tell me if you serve them to your child often, sometimes, rarely or never. Once again, let me know if you don't serve, or your child doesn't eat, any of the foods mentioned.

Do you serve your preschooler **(READ STATEMENT)** often, sometimes, rarely or never?

Food	Doesn't Serve/eat	Frequency			Comments (note: allergy, special diet)
		Often	Some times	Rarely Never	
French fries or hashbrowns					
Chips like potato, corn or taco chips					
Chocolate					
Cookies or cakes					
Danishes or donuts					
Take-out foods like pizza, fried chicken, hamburgers					

11. Now I will read you 8 statements about preschoolers and eating. Please tell me if you agree or disagree with the following statements or if you are uncertain.

a)	Chips and chocolate do not belong in a preschool child's diet	A	D	U
		3	1	2
b)	Peanut butter and cheese should not be limited in a preschool child's diet just because they are higher in fat.	A	D	U
		1	3	2
c)	Foods like chips & chocolate are okay for preschoolers to eat occasionally	A	D	U
		1	3	2
d)	A healthy diet for a preschooler should have a balance of higher fat and lower fat foods.	A	D	U
		1	3	2
e)	Higher fat foods can fit into a healthy diet for a preschool child.	A	D	U
		1	3	2
f)	Foods that are really high in fat are bad for preschoolers to eat.	A	D	U
		3	1	2
g)	There is no room for chips, sundaes and chocolate in a healthy diet for a preschooler.	A	D	U
		3	1	2
h)	Healthy eating for preschoolers is a balance over time which is not destroyed by one bad meal	A	D	U
		1	3	2

12. I would like to now ask you about the importance of nutrition. Is nutrition important to you when choosing food for your preschooler?
(CIRCLE RESPONSE)

Yes (GO TO QUESTION 13)1
 No (GO TO QUESTION 14)2
 No response (GO TO QUESTION 14)9

13. How important is nutrition to you in choosing food for your preschooler? Would you say it is...? (READ LIST)

Very important1
 Somewhat important2
 Not too important3
 Not important at all4
 No opinion/don't know8
 No response9

14. People get nutrition from many different sources. Today we've been talking about feeding preschool children and the role of fat in your families' diet, where have you got your information that you shared with me today?
(DO NOT READ LIST - CHECK ALL)

	Yes	No	Don't know	No Response
Product labels	.....1	.....2	.....8	.....9
Radio/TV	.....1	.....2	.....8	.....9
Friends/relatives/colleagues	.....1	.....2	.....8	.....9
Magazines	.....1	.....2	.....8	.....9
Food advertisements	.....1	.....2	.....8	.....9
Books	.....1	.....2	.....8	.....9
Newspapers	.....1	.....2	.....8	.....9
Family physician	.....1	.....2	.....8	.....9
Health association materials	.....1	.....2	.....8	.....9
In-store displays	.....1	.....2	.....8	.....9
Food company materials	.....1	.....2	.....8	.....9
Fitness/weight loss programs	.....1	.....2	.....8	.....9
Dietitian/nutritionist	.....1	.....2	.....8	.....9
Internet	.....1	.....2	.....8	.....9
Other (specify) _____	.....1	.....2	.....8	.....9
Don't know	.....1	.....2	.....8	.....9
No Response	.....1	.....2	.....8	.....9

15. Do you think your child eats
(**READ LIST**)

Too much fat	.....1
The right amount of fat	.....2
Too little fat	.....3
Not sure/don't know	.....8
No response	.....9

16. Are you concerned about how much fat your preschooler eats?
(**CIRCLE RESPONSE**)

Yes (GO TO QUESTION 17)	.....1
No (GO TO QUESTION 19)	.....2
Don't know (GO TO QUESTION 19)	.....8
No response(GO TO QUESTION 19)	.....9

17. How concerned are you about how much fat your preschooler eats? Very concerned, somewhat concerned, not too concerned or do you have no opinion?
(**CIRCLE RESPONSE**)

Very concerned (GO TO QUESTION 18)	.....1
Somewhat concerned (GO TO QUESTION 18)	.....2
Not too concerned (GO TO QUESTION 18)	.....3
No opinion (GO TO QUESTION 19)	.....4
Don't know (GO TO QUESTION 19)	.....8
No response (GO TO QUESTION 19)	.....9

18. Is there anything that has caused you to be concerned about the amount of fat your preschooler eats?

(DO NOT READ LIST – CHECK ALL THAT APPLY)

	Yes	No	Don't know	No Response
Child is overweight	1	2	8	9
Child is underweight	1	2	8	9
Child is being teased at school about weight	1	2	8	9
Respondent is overweight	1	2	8	9
Respondent was overweight as a child and wants to prevent this for their children	1	2	8	9
Family history of Cardiovascular risk (increased blood cholesterol, heart attack)	1	2	8	9
(SPECIFY WHO)				
child's mother	1	2	8	9
child's father	1	2	8	9
child's grandparents	1	2	8	9
other	1	2	8	9
Child placed on low fat diet by	1	2	8	9
(SPECIFY WHO)				
Doctor	1	2	8	9
Dietitian	1	2	8	9
Other	1	2	8	9
Influenced by media	1	2	8	9
Influenced by other	1	2	8	9
(specify)	1	2	8	9
Don't know	1	2	8	9
No response	1	2	8	9

19. Would you agree, disagree or are you uncertain about the following statements

- | | | | |
|---|---|---|---|
| a) If children eat a lower fat diet when they are young, they will be healthy adults | A | D | U |
| | 1 | 3 | 2 |
| b) If children eat a lower fat diet when they are young, they are less likely to develop heart disease when they are older. | A | D | U |
| | 1 | 3 | 2 |
| c) If children eat a lower fat diet when they are young, they are less likely to become overweight when they are older | A | D | U |
| | 1 | 3 | 2 |

The last few questions are background questions about you and your family.

20. Are you married, widowed, separated, divorced, or have you never been married?

(DO NOT READ - CIRCLE RESPONSE)

- | | |
|-------------------------------|--------|
| married (excluding separated) |1 |
| common law |2 |
| widowed |3 |
| divorced/separated |4 |
| never married (i.e. Single) |5 |
| other (specify) _____ |6 |
| no response |9 |

21. What is the highest grade in school or year at college that you have completed?
(DO NOT READ - CIRCLE RESPONSE)

- | | |
|---|---------|
| grade 8 or less |01 |
| some high school |02 |
| completed high school |03 |
| some post secondary training (non university) |04 |
| post secondary certificate or diploma |05 |
| some university |06 |
| completed university (has degree) |07 |
| post-graduate training |08 |
| describe if foreign education _____ |09 |
| don't know |88 |
| no response |99 |

22. Are you currently employed full time, part time or not employed outside the home
(DO NOT READ – CIRCLE RESPONSE)

Full time	.....1
Part time	.....2
Not employed outside the home	.....3
Other (Specify): _____	.....4
No response	.....9

23. The next question is about your age. Please stop me when I get to your age group. Are you:
(READ LIST)

Under 20 years	.....1
Under 30	.....2
Under 40	.....3
Over 40	.....4
No response	.....99

(IF MARRIED IN QUESTION 20 ASK QUESTION 24, 25, 26)

24. What is the highest grade in school or year at college that your spouse/partner has completed?
(DO NOT READ – CIRCLE RESPONSE)

grade 8 or less	.....01
some high school	.....02
completed high school	.....03
some post secondary training (non university)	.....04
post secondary certificate or diploma	.....05
some university	.....06
completed university (has degree)	.....07
post-graduate training	.....08
describe if foreign education _____	.....09
don't know	.....88
no response	.....99

25. Is your spouse/partner currently employed full time, part time or not employed outside the home
(DO NOT READ – CIRCLE RESPONSE)

Full time	.....1
Part time	.....2
Not employed outside the home	.....3
Other (Specify): _____	.....4
No response	.....9

26. The next question is about your spouse's age. Please stop me when I get to the right age group. Is he/she:
(READ LIST)

Under 20 years	.....1
Under 30	.....2
Under 40	.....3
Over 40	.....4
No response	.....99

27. Now I would like to ask about your family's total yearly income, from all sources, before taxes. I will read several income categories. When I come to the category that best describes your family's total yearly income before taxes, please stop me.
(READ LIST)

Under \$15,000	.....1
Under \$25,000	.....2
Under \$35,000	.....3
Under \$45,000	.....4
Under \$55,000	.....5
Over \$55,000	.....6
Don't know	.....88
No response	.....99

Thank you so much for taking the time to be part of this research project. I would like to now ask you if you have any questions about feeding preschoolers that I could answer.

Appendix H:
Revised Pilot Questionnaire
(Used in Pilot Study)

Var/Card/Col

Subject ID# ____/____/____/____ ID/1/1-4

Interviewer ID # ____/____ INT/1/5

Postal Code ____/____/____ Postal/1/6-8

**TELEPHONE INTERVIEW – PARENTS AWARENESS, KNOWLEDGE, BELIEFS AND USE OF
FAT RECOMMENDATIONS FOR PRESCHOOL CHILDREN**

DEPARATMENT OF FOODS AND NUTRITION, UNIVERSITY OF MANITOBA, SPRING 2000

Record of Calls: (Contact made at different times of the day and different days of the week)

Contact Attempt (record day of week)	Date	Time of call	Outcome Code	Comments
---	------	--------------	--------------	----------

1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____

NA = No Answer

AM = Answering Machine

BZ = Busy Signal

FM = Fax Machine

WN = Wrong Number (check 411)

DS = Disconnected (check 411)

CB = Call back (record date and time)

Unable to contact by telephone**FATE/1/9**

Telephone disconnected1

No contact after 8 call backs2

Successful contact

Completed interview3

Refused interview

With non-responder Q're4 reason for refusal _____

Without non-responder Q're5 reason for refusal _____

Ineligible – screened out6

Language problem - I'w not completed7

Partial interview completed8

Other (specify)9

Start Time _____

May I speak to _____ **(MOTHERS NAME)?**

Hello my name is _____. I am a dietitian/nutritionist calling from the University of Manitoba.

1. Did you receive our letter about the study we are doing on preschool children?

RECLET/1/10

no 2

(SAY) I am sorry yours didn't reach you. It was a brief letter we sent so people would know we would be calling to talk to parents about their thoughts on feeding preschoolers.
(GO TO Q.2)

yes 1

don't know 8

no response 7

(SAY) As the letter mentioned, we are calling to talk to parents about their thoughts on feeding preschoolers.
(GO TO Q.2)

2. We would like to talk to the person who does most of the food preparation and feeding of your preschooler. Would that be you?

yes 1

usually 2

shared with partner 3

(GO TO Q. 3)

no 4

responsible

no response 7

SAY: Could I speak to the person who is primarily responsible for feeding your preschooler?

**IF NOT THERE, ARRANGE CALL BACK TIME
RECORD DAY AND TIME _____
PUT ON RECORD OF CALLS SHEET**

IF THERE, SAY, Hello my name is _____ from the University of Manitoba. We had sent you a brief letter last week about a study we are doing on preschool children. (GO TO Q. 3)

3. Our questions can be answered over the phone and should only take about 15 minutes. They are not at all difficult and there is no right or wrong answers.

Your participation is voluntary. You can refuse to answer any question or stop the interview at any time. Your answers will be kept strictly confidential. Do you have any questions about the study?

(ANSWER RESPONDENTS QUESTIONS - REFER TO COMMON QUESTIONS AND ANSWER SHEET)

Are you willing to participate?

PARTIC/1/11

yes 1 **(GO TO Q. 4)**

no 2 **(TRY TO CONVERT TO YES. IF NO, GO TO NON-RESPONDER QUESTIONNAIRE)**

(IF INCONVENIENT TIME ARRANGE CALLBACK TIME)

**RECORD DAY AND TIME _____
PUT ON RECORD OF CALLS SHEET**

4. Okay that's great. To begin, do you have one or more children who are 2 or 3 years of age? **PSC/1/12**

one 1 **(GO TO Q. 6)**

more than one 2 **(GO TO Q. 5)**

no response 7 **(GO TO Q. 5)**

not applicable 9

5. For the purpose of the study we need to pick one preschooler. Can you tell me their names and I'll pick one at random. **(REFER TO SHEET AND PICK THE CHILD APPEARING ON MANITOBA HEALTH SAMPLING)**

For the questions today, please focus on **(NAME OF CHILD ON MASTER LIST)** when you answer the questions.

6. Is your preschooler a boy or a girl?

GENDER/1/13

Boy 1

Girl 2

No response 7

Not applicable 9

7. Is he/she 2 or 3 years old?

PSCAGE/1/14

2 years (24-36 months)1
 3 years (37-48 months)2
 No response7
 Not applicable9

8. Is he/she presently on a special diet prescribed by a doctor or dietitian?

Yes1 (GO TO Q. 9)
 No2
 No response7 (GO TO Q. 10)
 Don't know8
 Not applicable9

SPECDIET/1/15

9. What type of diet is it?
 (DO NOT READ LIST)

DIET/1/16-17

Weight-reducing01
 Low salt02
 Diabetic03 (GO TO Q. 10)
 Low blood sugar04
 Allergies05
 Hyperactivity06
 ** Heart disease07 (EXCLUDE - READ
 STATEMENT BELOW)
 • Vegetarian08 (PROBE TYPE - EXCLUDE
 VEGAN)
 Other (specify)09
 No response77
 Don't know88 (GO TO Q. 10)
 Not applicable99

** (IF HEART DISEASE) I'm sorry we will be unable to include you in the study. The survey is limited to parents with children who are not on special diets for heart disease. Thank you for your time.

* (IF VEGAN) I'm sorry we will be unable to include you in the study. Many of the questions pertain to animal food products. Thank you for your time.

Manitoba Milk Producers has a pamphlet about feeding preschoolers. With your permission I will pass on your name and they will mail you a copy. Would that be okay with you?

PAMPHL/3/21

no2 (SAY) Thank you very much for your time

Yes1
 no response7
 Not applicable9

10. Does he/she have any medical problems that affect growth or make eating difficult?

MEDICAL/1/18

Yes1 (GO TO Q. 11)

No2

No Response7 (GO TO Q.12)

Don't know8

11. What type of medical problems does he/she have?
(DO NOT READ LIST – CIRCLE RESPONSE)

MED/1/19

Cerebral palsy1

Cystic fibrosis2 (EXCLUDE - READ STATEMENT BELOW)

Failure to thrive3

PKU4

Epilepsy (ketogenic diet)5

Other (specify)6 (EXCLUDE IF APPROPRIATE – READ STATEMENT BELOW)

Other (specify)7

Don't know8 (GO TO Q. 12)

No response7

Not applicable9

READ STATEMENT: I am sorry then, we are unable to include your child in the study. The survey is limited to children who do not have medical problems that affect growth or make eating difficult.



Manitoba Milk Producers has a pamphlet about feeding preschoolers. With your permission I will pass on your name and they will mail you a copy. Would that be okay with you?

PAMPHL/3/21

no2 (SAY) Thank you very much for your time

Yes1

no response7

Not applicable9

12. Our next question is about general concerns parents may have with feeding their preschooler. I will read a list of concerns. Please tell me if you are very concerned, somewhat concerned or not concerned after I read each one.

My preschooler (**READ STATEMENT**):

Are you very concerned, somewhat concerned or not concerned about that?

	Very Concerned	Somewhat concerned	Not concerned	Don't know	No response	
Eats a limited variety of foods.....	1	2	3	8	7	1/20
Dawdles at meals	1	2	3	8	7	1/21
Has a poor appetite	1	2	3	8	7	1/22
<hr/>						
Eats too much fat.....	1	2	3	8	7	1/23
	Go to bk 1	Go to bk 1	Go to bk 2	Go to Q.14 in book 1	Go to Q.14	
<hr/>						
Doesn't drink enough milk	1	2	3	8	7	1/24
Eats too much salt	1	2	3	8	7	1/25
Eats too much sugar.....	1	2	3	8	7	1/26
Doesn't eat enough vegetables	1	2	3	8	7	1/27
Doesn't eat enough meat.....	1	2	3	8	7	1/28
Eats too much junk food	1	2	3	8	7	1/29

Do you have any other concerns about feeding your preschooler that I haven't mentioned?

Other (*specify*) _____

Are you very, somewhat or not at all concerned about that?

..... 1 2 3 8 7 1/30

Other (*specify*) _____

Are you very, somewhat or not at all concerned about that?

..... 1 2 3 8 7 1/31

Subject ID# / / / /
ID/1/1-4

BOOKLET 1 - CONCERNED GROUP

(ANSWERED "VERY CONCERNED OR SOMEWHAT CONCERNED" FOR "EATS TOO MUCH FAT" IN QUESTION 1)

13. The rest of our questions focus on one of the concerns you mentioned. We are interested to learn more about parents' concern that their preschoolers eat too much fat.

What are some of the reasons why you are concerned about that?

(DO NOT READ LIST - CIRCLE ALL THAT APPLY)

PROBE: Any other reasons?

	Mentioned		reasc
	Yes	No	
<u>Weight</u>			
Child is overweight	1.....	2.....	/1/32
Parent(s) is overweight.....	1.....	2.....	/1/33
Parent(s) was overweight as a child and wants to prevent this for their child.....	1.....	2.....	/1/34
Eating less fat will prevent overweight later in life	1.....	2.....	/1/35
<u>CHD</u>			
Eating less fat will prevent CHD later in life	1.....	2.....	/1/36

Family history of Cardiovascular risk
(i.e. increased blood cholesterol, heart attack, death)

PROBE FOR FAMILY MEMBER

child's mother	1.....	2.....	/1/37
child's father	1.....	2.....	/1/38
child's grandparents	1.....	2.....	/1/39
other (specify)	1.....	2.....	/1/40
Eating too much fat is unhealthy or bad for health	1.....	2.....	/1/41
<u>Media</u>			
Influenced by media (TV, magazines, newspaper)	1.....	2.....	/1/42
Other (specify)	1.....	2.....	/1/43
Other (specify)	1.....	2.....	/1/44
Don't know	1.....	2.....	/1/45
No Response	1.....	2.....	/1/46
Not applicable	1.....	2.....	/1/47

14. Is there anything you generally do when preparing foods that would decrease the amount of fat that your preschooler eats?

PREP/1/48

Yes (doing something)1 (GO TO Q. 15)
 No (not doing anything)2
 Don't know8 (GO TO Q. 16)
 No response7
 Not applicable9

15. What are you doing?
 (DO NOT READ LIST - CIRCLE ALL THAT APPLY)

IF MENTION GENERAL PRACTICES, PROBE: Can you tell me more about that?
 Can you tell me how you do that?

PROBE: Are you doing anything else?

PROBE: Anything else?

	Mentioned		
	Yes	No	
Bake or broil foods instead of frying	1	2	/1/49
Use nonstick-coating spray instead of greasing pans	1	2	/1/50
Drain fat from cooked meat	1	2	/1/51
Rinse drained, cooked meat with water	1	2	/1/52
Trim fat from meats	1	2	/1/53
Remove skin from chicken and turkey	1	2	/1/54
Replace fat in baking with fruit, applesauce, yogurt	1	2	/1/55
Replace homo milk or cream with skim or 1% milk in baking, cooking	1	2	/1/56
Serve muffins or bread without butter/margarine	1	2	/1/57
Serve vegetables without butter, margarine or cream sauce	1	2	/1/58
Serve more vegetarian meals	1	2	/1/59
Use low fat recipes	1	2	/1/60
Other (specify)	1	2	/1/61
Other (specify)	1	2	/1/62
Other (specify)	1	2	/1/63
Other (specify)	1	2	/1/64
Other (specify)	1	2	/1/65
Not applicable	1	2	/1/66

16. Next, I'm wondering if there are any foods you don't give your preschooler or that you cut down on to decrease fat?

CUTFOODS/1/67

Yes (doing something)1 (GO TO Q. 17)
 No (not doing anything)2
 Don't know8 (GO TO Q. 18)
 No response7
 Not applicable9

17. What foods are you cutting back or cutting out?
 (DO NOT READ LIST – CIRCLE ALL THAT APPLY)

(IF MENTION HIGH FAT FOODS IN GENERAL, PROBE: Can you give me an example of a food you cut back or cut out?

PROBE: Any other foods?

PROBE: Anything else?

	yes	Mentioned no	
CUT DOWN/OUT HIGH FAT FOODS			
margarine/butter	1	2	/1/68
chips like potato, corn, taco	1	2	/1/69
french fries, hashbrowns	1	2	/1/70
fast foods (burger places (e.g. McDonalds), pizza, fried chicken)	1	2	/1/71
cheese	1	2	/1/72
chocolate	1	2	/1/73
cookies, cakes	1	2	/1/74
danishes, donuts	1	2	/1/75
hot dogs	1	2	/1/76
red meat	1	2	/1/77
pizza pops	1	2	/1/78
rich sauces/gravy	1	2	/1/79
Other (specify)	1	2	/1/80
Other (specify)	1	2	/1/81
Other (specify)	1	2	/1/82
Other (specify)	1	2	/1/83
Other (specify)	1	2	/1/84
Not applicable	1	2	/1/85

18. We've talked about preparing and cutting back on foods to decrease fat. Now I'd like you to think about buying foods. Is there anything you do when you buy foods to decrease the fat that your preschooler eats?

BUYFOOD/2/01

Yes (doing something)1 (GO TO Q. 19)
 No (not doing anything)2
 Don't know8 (GO TO Q. 20)
 No response7
 Not applicable9

19. What are you doing?
 (DO NOT READ LIST - CIRCLE ALL THAT APPLY)

(IF MENTION BUY LOWER FAT FOODS OR LESS HIGH FAT FOOD -

PROBE: Can you give me an example of foods you may buy?

PROBE: Any other foods?

PROBE: Anything else?

	Yes	Mentioned No	
BUY LOWER FAT FOODS			
skim milk.....	1.....	2.....	/2/02
1% milk.....	1.....	2.....	/2/03
lean/extra lean ground beef.....	1.....	2.....	/2/04
leaner cuts of meat.....	1.....	2.....	/2/05
BUY FAT REDUCED MANUFACTURED PRODUCTS			
cheese slices or cheese spread.....	1.....	2.....	/2/06
yogurt	1.....	2.....	/2/07
frozen dairy desserts.....	1.....	2.....	/2/08
crackers	1.....	2.....	/2/09
cookies - store bought.....	1.....	2.....	/2/10
dressing/mayonnaise	1.....	2.....	/2/11
margarine	1.....	2.....	/2/12
luncheon meat.....	1.....	2.....	/2/13
wieners/hot dogs	1.....	2.....	/2/14
peanut butter	1.....	2.....	/2/15
Other (specify)	1.....	2.....	/2/16
Other (specify)	1.....	2.....	/2/17
Other (specify)	1.....	2.....	/2/18
Other (specify)	1.....	2.....	/2/19
Not applicable.....	1.....	2.....	/2/20

20. Next I'll read several statements about what parents may believe about fat that preschool children eat. Please tell me if you agree or disagree with the statements, or if you are uncertain. (CIRCLE A, D, U or NR)

	agree	disagree	uncertain	no response	BELIEF
Preschoolers should eat low fat diets..... just like adults should	A-3	D-1	U-2	NR-7	2/21
A child who eats lots of high-fat foods is more likely to be overweight later on	A-3	D-1	U-2	NR-7	2/22
It is more important for preschoolers to have enough energy to grow than it is for them to eat a low fat diet	A-1	D-3	U-2	NR-7	2/23
Since preschoolers are small they don't need much energy or fat.	A-3	D-1	U-2	NR-7	2/24
Higher fat foods can be important for preschoolers to help meet their high energy needs.	A-1	D-3	U-2	NR-7	2/25
It is best to limit a preschooler's fat intake just as we do for adults.	A-3	D-1	U-2	NR-7	2/26
If a preschooler eats lots of high-fat foods when young they will never like low-fat foods	A-3	D-1	U-2	NR-7	2/27
Preschoolers should eat a balance of higher-fat and lower-fat foods.....	A-1	D-3	U-2	NR-7	2/28
Parents should try to limit the amount of fat their preschoolers eat as much as possible.....	A-1	D-3	U-2	NR-7	2/30
Higher-fat foods like chips and chocolate are okay for preschoolers to eat in moderation.....	A-1	D-3	U-2	NR-7	2/31
Cutting out higher-fat foods would make it difficult for preschoolers to meet their high energy needs	A-3	D-1	U-2	NR-7	2/32
Foods that are really high in fat have no place in a child's healthy diet.....	A-3	D-1	U-2	NR-7	2/34
It's okay for preschoolers to eat a bit more fat because they need energy to grow	A-1	D-3	U-2	NR-7	2/35
A child who eats lots of fat when they are young is more likely to get heart disease as an adult	A-3	D-1	U-2	NR-7	2/37

21. The next few questions are about what you have heard about fat for adults and children.

First, are you aware of any guidelines on what fat intake should be for adults?

IF NOT SURE PROBE: What's on your mind? What are you thinking?

AWARE1/2/38

Yes	1	} (GO TO 22a)
No	2	
Don't know	8	
No response	7	
Not applicable	9	

22. What have you heard? (**RECORD RESPONSE**)

PROBE: Is there anything else you have to add?

- 22a. Are you aware of any information that talks about the type and amount of fat adults should be eating? If yes...What have you heard? (**RECORD RESPONSE**)

PROBE: Is there anything else you have to add?

Coding categories (OFFICE USE ONLY)	Mentioned		KNOW1
	Yes	No	
Adults should lower their intake of fat (minimal).....	1	2	/2/36
Adults should eat less than 30% of calories as fat.....	1	2	/2/37
Adults should eat less saturated fat	1	2	/2/38
Adults should eat less than 10% of calories as saturated fat.....	1	2	/2/39
Adults should lower the amount of cholesterol they consume to 300mg/day or less.....	1	2	/2/40
Adults should reduce the amount of cholesterol they eat	1	2	/2/41
Adults should cut out fat from their diet.....	1	2	/2/42
Adults should cut out cholesterol from their diet	1	2	/2/43
Other (<i>specify</i>).....	1	2	/2/44
Other (<i>specify</i>).....	1	2	/2/45
Other (<i>specify</i>).....	1	2	/2/46
Don't know	1	2	/2/47
No Response.....	1	2	/2/48
Not applicable.....	1	2	/2/49

23. Are you aware of any guidelines on what fat intake should be for preschool children?

IF NOT SURE PROBE: What's on your mind? What are you thinking?

AWARE1/2/50

Yes	1	(GO TO 24)
No	2	} (GO TO 24a)
Don't know	8	
No response	7	
Not applicable	9	

24. What do the guidelines say? (**RECORD RESPONSE**)

PROBE: Is there anything else you have to add about the guidelines?

24a. Are you aware of any information that talks about fat in the eating pattern of preschool children? If yes...What have you heard? (**RECORD RESPONSE**)

PROBE: Is there anything else you have to add?

Coding Categories (OFFICE USE ONLY)	Mentioned		KNOW2
	Yes	No	
Parents should allow their preschooler to consume a higher proportion of fat when they are younger than adults (minimal).....	1	2	/2/51
Fat should not be restricted in early childhood (minimal).....	1	2	/2/52
Preschoolers should consume higher fat diets than the <30% energy as fat recommended for adults	1	2	/2/53
Gradual transition to a lower fat diet as children grow	1	2	/2/54
Preschool children should consume low fat diets	1	2	/2/55
Low fat diets are good for preschoolers to prevent heart disease	1	2	/2/56
Low fat diets are good for preschoolers to prevent obesity.....	1	2	/2/57
Other (<i>specify</i>)	1	2	/2/58
Other (<i>specify</i>)	1	2	/2/59
Other (<i>specify</i>)	1	2	/2/60
Don't know	1	2	/2/61
No Response	1	2	/2/62
Not applicable	1	2	/2/63

25. The next question asks where parents get information on feeding preschoolers. As you know, people get information from many sources. I'm wondering where you got the information you shared with me today? You can give me as many sources as you like.

(DO NOT READ LIST - CIRCLE ALL THAT APPLY)

PROBE: Are there any other sources?

	Mentioned		SOURCE
	yes	no	
Product labels.....	1.....	2.....	/2/64
Radio/TV.....	1.....	2.....	/2/65
Friends/relatives/coworkers.....	1.....	2.....	/2/66
Magazine articles.....	1.....	2.....	/2/67
Food advertisements.....	1.....	2.....	/2/68
Books.....	1.....	2.....	/2/69
Newspapers.....	1.....	2.....	/2/70
Family physician/nurse.....	1.....	2.....	/2/71
Health association materials (Heart & stroke, Cancer society etc.).....	1.....	2.....	/2/72
In-store displays.....	1.....	2.....	/2/73
Food company materials (milk, beef, egg marketing board, becel margarine etc.).....	1.....	2.....	/2/74
Fitness/weight loss programs.....	1.....	2.....	/2/75
Dietitian/nutritionist.....	1.....	2.....	/2/76
Internet.....	1.....	2.....	/2/77
Naturopath.....	1.....	2.....	/2/78
Other (specify).....	1.....	2.....	/2/79
Other (specify).....	1.....	2.....	/2/80
Other (specify).....	1.....	2.....	/2/81
Don't know.....	1.....	2.....	/2/82
No Response.....	1.....	2.....	/2/83
Not Applicable.....	1.....	2.....	/2/84

26. The last few questions are background questions about you and your family. They help us know if the parents we talk to represent all parents of preschool children in Manitoba.

First of all, how many people live in your home, including yourself?

HOUSESIZE/3/01-02

(RECORD RESPONSE) /__/_/

no response77

not applicable99

27. How old are your children, starting with the youngest?

(RECORD RESPONSE)

OFFICE USE ONLY

of children under 18 years /__/_/

Not applicable 9

AMTCHILD/3/03-04

of preschool children /__/_/

Not applicable 9

PRESCHOOL/3/05

Ordinal position of target child /__/_/

ORDINAL/3/06-07

Parental status

PARENT/3/08

First time parent 1

Other children 2

Not applicable 9

28. What is the highest grade in school or year at college you have completed?
(DO NOT READ LIST - CIRCLE RESPONSE)

RESPEDU/3/09-10

grade 8 or less.....	01
some high school	02
completed high school.....	03
some post secondary training (non university).....	04
post secondary certificate or diploma.....	05
some university.....	06
completed university (has degree)	07
post-graduate training	08
describe if foreign education	09
don't know	88
no response.....	77

29. Are you currently employed full time, part time or not employed outside the home?
(DO NOT READ LIST - CIRCLE RESPONSE)

RESPEMP/3/11

Full time (30+ hours/week).....	1
Part time (<30 hours/week)	2
Not employed outside the home	3
Other (specify).....	4
Don't know	8
No response	7

30. The next question is your age category. Are you:
(READ LIST - CIRCLE RESPONSE)

RESPAGE/3/12

19 years or younger	1
20 to 30 years.....	2
31 to 40 years.....	3
41 years or older	4
Don't know	8
No response	7

31. Are you married or living with a partner, divorced, separated, widowed or never married?
(DO NOT READ LIST - CIRCLE RESPONSE)

MARITAL/3/13

married or living with partner	1	(GO TO Q. 32)
divorced/separated	2	} (GO TO Q. 35)
widowed	3	
never married	4	
.....		
other (specify)	5	
no response	7	

32. Now for your spouse/partner. What is the highest grade in school or year at college he/she has completed?

(DO NOT READ LIST - CIRCLE RESPONSE)

PARTEDU/3/14-15

grade 8 or less	01
some high school	02
completed high school	03
some post secondary training (non university)	04
post secondary certificate or diploma	05
some university	06
completed university (has degree)	07
post-graduate training	08
describe if foreign education	09
don't know	88
no response	77
not applicable	99

33. Is he/she currently employed full time, part time or not employed outside the home?
(DO NOT READ LIST - CIRCLE RESPONSE)

PARTEMP/3/16

Full time (30+ hours/week)	1
Part time (<30 hours/week)	2
Not employed outside the home	3
Other (specify)	4
No response	7
Not applicable	9

34. The next question is his/her age. Is he/she:
(**READ LIST - CIRCLE RESPONSE**)

PARTAGE/3/17

19 years or younger1
 20 to 30 years.....2
 31 to 40 years.....3
 41 years or older4
 No response7
 Not applicable.....9

35. The last question is about your family income. I will read several income categories.
 When I come to the category that best describes your family's total yearly income from all
 sources, before taxes, please stop me.
 (**READ LIST - CIRCLE RESPONSE**)

INCOME/3/18

Under \$15,000.....1
 Under \$25,000.....2
 Under \$35,000.....3
 Under \$45,000.....4
 Under \$55,000.....5
 Over \$55,000.....6
 Don't know8
 No response7

This concludes our questions. Thank you very much for participating.

Stop time _____

INTTIME/3/19
 /_/_/ minutes

As I'm sure you have realized, many of the questions we have asked today are about fat that preschool children eat. Before I let you go, I wanted to quickly tell you what is currently recommended by Health Canada with respect to fat that young children eat. (**SEE DEBRIEF SHEET**)

Do you have any questions about feeding preschoolers? (**PAUSE-ANSWER QUESTIONS**)

36. Would you be interested in receiving a summary of the results of this project when it is completed?

Yes1
 No2
 No response7

RESULTS/3/20

37. We have a pamphlet about feeding preschoolers. Would you like us to mail you a copy?

PAMPHL/3/21

no2 **(SAY)** Thank you very much for participating
 in our survey.

Yes1
 no response7
 Not applicable9

38. With your permission I will pass on your name to Manitoba Milk Producers who are mailing out the pamphlet. Would that be okay with you?

yes1
 no2
 no response7
 Not applicable9

Thank you again for participating today.

(RECORD IF RESPONDENT IS MOTHER OR FATHER)

RESPSEX/3/22

Mother1
 Father2
 Other (specify)3

Interviewer Observations

1. How long did the interview take? ____ minutes
TIME/3/23-24
2. How cooperative was the subject?
COOPER/3/25
 - Not cooperative1
 - Somewhat cooperative2
 - Very cooperative3
3. How well did subject understand the questions? **UNDER/3/26**
 - Poor understanding1
 - Fair understanding2
 - Good understanding3
4. Did subject have any trouble speaking English? **LANGUAGE/3/27**
 - Yes1
 - No2
5. How suspicious did subject seem about the study before the interview? **SUSPIC/3/28**
 - Not at all suspicious1
 - Somewhat suspicious2
 - Very suspicious3
6. Overall how great was the subjects interest in the interview? **INTEREST/3/29**
 - above average1
 - average2
 - below average3
7. Other comments **OTHER/3/30**

Subject ID# _/_/_/_/_/

BOOKLET 2 -NOT CONCERNED GROUP
("NOT AT ALL CONCERNED" ABOUT "TOO MUCH FAT" IN QUESTION 1)

13. Thank you for telling me what concerns you have about feeding your preschooler. The rest of the time today we would like to talk about just one of the concerns mentioned. We are interested to learn why some parents are concerned that their preschooler eats too much fat and others are not.

Could you please tell me what some of the reasons are why you, in particular are not concerned?

(DO NOT READ LIST - CIRCLE ALL THAT APPLY)

REASON

PROBE: Any other reasons?

	mentioned		
	Yes	No	
Family eats healthy meals	1	2	/3/31
Family already eats lower fat diet	1	2	/3/32
Family eats reasonably well	1	2	/3/33
Child isn't allowed much "junk food"	1	2	/3/34
Preschooler is active so the amount of fat doesn't matter	1	2	/3/35
Preschooler is too thin and doesn't eat enough fat	1	2	/3/36
Preschooler is a good weight and healthy so too much fat isn't a concern	1	2	/3/37
Preschoolers should be eating more fat anyway	1	2	/3/38
Not aware that lowering fat is important	1	2	/3/39
Other (specify)	1	2	/3/40
Other (specify)	1	2	/3/41
Don't know	1	2	/3/42
No response	1	2	/3/43
Not Applicable	1	2	/3/44

14. Even though you said (**USE RESPONDENTS WORDS FROM QUESTION 2**). I'm wondering if there is anything you generally do when preparing foods that would decrease the amount of fat your preschooler eats?

PREP/1/48

Yes (doing something)1 (GO TO Q. 15)
 No (not doing anything)2
 Don't know8 (GO TO Q. 16)
 No response7
 Not applicable9

15. What are you doing?
 (**DO NOT READ LIST - CIRCLE ALL THAT APPLY**)

IF MENTION GENERAL PRACTICES, PROBE: Can you tell me more about that?
 Can you tell me how you do that?

PROBE: Are you doing anything else?

PROBE: Anything else?

	Mentioned		
	Yes	No	
Bake or broil foods instead of frying	1	2	/1/49
Use nonstick-coating spray instead of greasing pans	1	2	/1/50
Drain fat from cooked meat	1	2	/1/51
Rinse drained, cooked meat with water	1	2	/1/52
Trim fat from meats	1	2	/1/53
Remove skin from chicken and turkey	1	2	/1/54
Replace fat in baking with fruit, applesauce, yogurt	1	2	/1/55
Replace homo milk or cream with skim or 1% milk in baking, cooking	1	2	/1/56
Serve muffins or bread without butter/margarine	1	2	/1/57
Serve vegetables without butter, margarine or cream sauce	1	2	/1/58
Serve more vegetarian meals	1	2	/1/59
Use low fat recipes	1	2	/1/60
Other (specify)	1	2	/1/61
Other (specify)	1	2	/1/62
Other (specify)	1	2	/1/63
Other (specify)	1	2	/1/64
Other (specify)	1	2	/1/65
Not applicable	1	2	/1/66

Appendix I:
Ethical Approval for Telephone Questionnaire



THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
DEPARTMENT OF FAMILY STUDIES

Human Ecology Building
Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-8053
(204) 474-7592 FAX
higgitt@cc.umanitoba.ca

17 December 1999

Holly Milton
Department of Foods and Nutrition
University of Manitoba

Dear Holly,

The Ethics Review Committee has considered your proposal, "A telephone survey on the awareness, knowledge, beliefs and application of dietary fat recommendations by parents of preschoolers" #9916. The Committee has determined that your proposal meets the ethics guidelines and approves the proposal.

Although they are not ethical issues, reviewers have made 2 suggestions for your consideration. These are:

1. Public sources of information regarding nutrition for preschoolers might be offered at the end of the phone interview as a courtesy and public service.
2. Information might be collected concerning respondent's ethnicity or cultural background as part of the demographic data. Should you decide to include this, please send a memo to the Ethics Review Committee indicating this.

Good luck with your project.

A handwritten signature in black ink, appearing to read 'N. Higgitt', written in a cursive style.

Nancy C. Higgitt, PhD
Chair, Ethics Review Committee
Faculty of Human Ecology

Appendix J:

Introductory Letter to Respondents (Telephone Questionnaire)



THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
DEPARTMENT OF FOODS AND NUTRITION

Duff Roblin Building
Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-9554
(204) 474-7592 FAX

March 30, 2000

Dear Parent/Guardian,

Early childhood is an exciting time of change. Part of the change is that children become curious about food and eating. We would like to know how you and other parents in Manitoba feel about feeding preschoolers. Surprisingly, there is very little information about this in Canada. More information will help us provide better advice to you and other parents about feeding preschoolers. This important study is funded by The Canadian Foundation for Dietetic Research.

We will be calling shortly to speak with the person primarily responsible for feeding your preschool child. We would like to talk to that person about their views and thoughts on feeding preschool children. The interview will last about 15 minutes. You may refuse to answer any question and may stop the interview at any time. If we call at an inconvenient time, please tell us and we will be happy to call back later. Your participation is voluntary, but we would be most grateful if you would share your thoughts on this important topic. Your opinions on feeding preschoolers are essential for us to provide better information and advice to all parents.

You are one of 500 people being asked about their views on feeding preschoolers. Your name was randomly selected by Manitoba Health because you have a child between 2 and 4 years of age. You are assured of complete confidentiality. Your name will not appear on any of our reports. If you like, we would be happy to send a summary of the results of the project when it is completed and a pamphlet about feeding preschoolers.

Please consider sharing your thoughts and opinions with us. Your help would be greatly appreciated. It is important that we hear from all parents because we need to know the opinions of everyone.

Thank you for your time and consideration. If you have any questions, please call us at the above number or email us at the address below.

Sincerely,

Ms Holly Milton, RD
Project Coordinator
ummilto0@cc.umanitoba.ca

Dr Marian Campbell, PhD, RD, PHEC
Associate Professor/Project Director
mcampbl@cc.umanitoba.ca

Ms Lynda Corby, MSc, MEd, RD, FDC
Adjunct Professor
lcorby@cc.umanitoba.ca

Appendix K:
Non-Responder Demographic Questionnaire

Subject ID# _/_/_/_/

Non Responder Questionnaire

I understand you do not wish to participate in the project. However would you mind answering 6 questions instead? We use this information to make sure that the parents we talk to represent all parents in Manitoba. It will only take a couple of minutes and your answers will be kept strictly confidential.

1. The first question is how many children do you have, 18 years or younger?
(**DO NOT READ LIST - CIRCLE RESPONSE**)

AMTCHILD/3/03-04

one 1
two 2
three 3
four 4
five 5
other (specify) _____ 6
No response 7

2. What is the highest grade in school or year at college that you have completed?
(**DO NOT READ LIST - CIRCLE RESPONSE**)

RESPEDU/3/09-10

grade 8 or less 01
some high school 02
completed high school 03
some post secondary training (non university) 04
post secondary certificate or diploma 05
some university 06
completed university (has degree) 07
post-graduate training 08
describe if foreign education 09
don't know 88
no response 77

3. Are you currently employed full time, part time or not employed outside the home?

(DO NOT READ LIST - CIRCLE RESPONSE)**RESPEMP/3/11**

Full time (30+ hours/week) 1
Part time (<30 hours/week) 2
Not employed outside the home 3
Other (specify): _____ 4
Don't know 8
No response 7

4. The next question is your age category. Are you:
(**READ LIST – CIRCLE RESPONSE**)

RESPAGE/3/12

19 years or younger1
 20 to 30 years2
 31 to 40 years3
 41 years or older4
 No response.....9

5. Are you married or living with a partner, divorced or separated, widowed, or never married?

(**DO NOT READ LIST – CIRCLE RESPONSE**)

MARITAL/3/13

married or living with partner 1
 divorced/separated.....2
 widowed3
 never married4
 other (**specify**)5
 no response9

6. The last question is about your family income. I will read several income categories. When I come to the category that best describes your family's total yearly income from all sources, before taxes, please stop me.

(**READ LIST - CIRCLE RESPONSE**)

INCOME/3/18

Under \$15,000 1
 Under \$25,000 2
 Under \$35,000 3
 Under \$45,000 4
 Under \$55,000 5
 Over \$55,000 6
 Don't know 8
 No response..... 9

Thank you very much for your time. We really appreciate it.

(**RECORD IF RESPONDENT IS MOTHER OR FATHER**)

RESPSEX/3/22

Mother..... 1
 Father 2

Appendix L:
Questionnaire for Final Study

Var/Card/Col

Subject ID# ____/____/____/____ ID/1/1-4

Interviewer ID # ____/____/____ INT/1/5

Postal Code ____/____/____ Postal/1/6-8

**TELEPHONE INTERVIEW – PARENTS AWARENESS, KNOWLEDGE, BELIEFS AND USE OF FAT
RECOMMENDATIONS FOR PRESCHOOL CHILDREN**

DEPARATMENT OF FOODS AND NUTRITION, UNIVERSITY OF MANITOBA, FALL 2000

Record of Calls: (Contact made at different times of the day and different days of the week)

Contact Attempt (record day of week)	Date	Time of call	Outcome Code	Comments
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____

NA = No Answer
AM = Answering Machine
BZ = Busy Signal
FM = Fax Machine

WN = Wrong Number (check 411)
DS = Disconnected (check 411)
CB = Call back (record date and time)

Unable to contact by telephone

FATE/1/9

Telephone disconnected 1
No contact after 8 call backs 2

Successful contact

Completed interview 3
Refused interview
 With non-responder Q're 4 reason for refusal _____
 Without non-responder Q're 5 reason for refusal _____
Ineligible – screened out 6
Language problem - I'w not completed 7
Partial interview completed 8
Other (specify) 9

May I speak to _____ **(MOTHERS NAME)?**
 Hello my name is _____. I am a dietitian/nutritionist calling from the University of Manitoba.

1. Did you receive our letter about the study we are doing on preschool children?

RECLET/1/10

no2

(SAY) I am sorry yours didn't reach you. It was a brief letter we sent so people would know we would be calling to talk to parents about their thoughts on feeding preschoolers.
(GO TO Q.2)

yes1

don't know8

no response7

(SAY) As the letter mentioned, we are calling to talk to parents about their thoughts on feeding preschoolers.
(GO TO Q.2)

2. We would like to talk to the person who does most of the food preparation and feeding of your preschooler. Would that be you?

yes1

usually2

shared with partner.....3

(GO TO Q. 3)

no4

no response7

SAY: Could I speak to the person who is primarily responsible for feeding your preschooler?

**IF NOT THERE, ARRANGE CALL BACK TIME
 RECORD DAY AND TIME _____
 PUT ON RECORD OF CALLS SHEET**

IF THERE, SAY, Hello my name is _____ from the University of Manitoba. We had sent you a brief letter last week about a study we are doing on preschool children. (GO TO Q. 3)

3. Our questions can be answered over the phone and should only take about 15 minutes. They are not at all difficult and there is no right or wrong answers.

Your participation is voluntary. You can refuse to answer any question or stop the interview at any time. Your answers will be kept strictly confidential. Do you have any questions about the study?

(ANSWER RESPONDENTS QUESTIONS - REFER TO COMMON QUESTIONS AND ANSWER SHEET)

Are you willing to participate?

PARTIC/1/11

yes1 **(GO TO Q. 4)**

no2 **(TRY TO CONVERT TO YES. IF NO, GO TO NON-RESPONDER QUESTIONNAIRE)**

(IF INCONVENIENT TIME ARRANGE CALLBACK TIME)

**RECORD DAY AND TIME _____
PUT ON RECORD OF CALLS SHEET**

4. Okay that's great. To begin, do you have one or more children who are 2, 3 or 4 years of age?

PSC/1/12

one1 **(GO TO Q. 6)**

more than one2 **(GO TO Q. 5)**

no response7 **(GO TO Q. 5)**

not applicable9

5. For the purpose of the study we need to pick one preschooler. Can you tell me their names and I'll pick one at random. **(REFER TO SHEET AND PICK THE CHILD APPEARING ON MANITOBA HEALTH SAMPLING)**

For the questions today, please focus on **(NAME OF CHILD ON MASTER LIST)** when you answer the questions.

6. Is your preschooler a boy or a girl?

GENDER/1/13

Boy1

Girl2

No response7

Not applicable9

7. Is he/she 2, 3 or 4 years old?
PSCAGE/1/14

2 years (30-36 months)..... 1
3 years (37-48 months)..... 2
4 years (49-54 months)..... 3
No response..... 7
Not applicable..... 9

8. Is he/she presently on a special diet prescribed by a doctor or dietitian?

Yes..... 1 (GO TO Q. 9)
SPECDIET/1/15

No..... 2
No response..... 7 (GO TO Q. 10)
Don't know..... 8
Not applicable..... 9

9. What type of diet is it?
DIET/1/16-17
(DO NOT READ LIST)

Weight-reducing..... 01
Low salt..... 02
Diabetic..... 03 (GO TO Q. 10)
Low blood sugar..... 04
Allergies..... 05
Hyperactivity..... 06

** Heart disease..... 07 (EXCLUDE - READ STATEMENT BELOW)
• Vegetarian..... 08 (PROBE TYPE - EXCLUDE VEGAN)

Other (specify)..... 09
No response..... 77
Don't know..... 88 (GO TO Q. 10)
Not applicable..... 99

** (IF HEART DISEASE) I'm sorry we will be unable to include you in the study. The survey is limited to parents with children who are not on special diets for heart disease. Thank you for your time.

* (IF VEGAN) I'm sorry we will be unable to include you in the study. Many of the questions pertain to animal food products. Thank you for your time.



Manitoba Milk Producers has a pamphlet about feeding preschoolers. With your permission I will pass on your name and they will mail you a copy. Would that be okay with you?

PAMPHL/4/41

no..... 2 (SAY) Thank you very much for your time
Yes..... 1
no response..... 7
Not applicable..... 9

10. Does he/she have any medical problems that affect growth or make eating difficult?

Yes..... 1 (GO TO Q. 11)
No..... 2
No Response..... 7 (GO TO Q. 12)
Don't know..... 8

MEDICAL/1/18

11. What type of medical problems does he/she have?
(DO NOT READ LIST - CIRCLE RESPONSE)

MED/1/19

Cerebral palsy 1
 Cystic fibrosis 2
 Failure to thrive 3
 PKU 4
 Epilepsy (ketogenic diet) 5

(EXCLUDE - READ STATEMENT
BELOW)

Other (specify) 6
 Other (specify) 7

(EXCLUDE IF APPROPRIATE - READ
STATEMENT BELOW)

Don't know 8
 No response 7

(GO TO Q. 12)

Not applicable 9

READ STATEMENT: I am sorry then, we are unable to include your child in the study. The survey is limited to children who do not have medical problems that affect growth or make eating difficult.



Manitoba Milk Producers has a pamphlet about feeding preschoolers. With your permission I will pass on your name and they will mail you a copy. Would that be okay with you?

PAMPHL/4/41

no 2 (SAY) Thank you very much for your time

Yes 1

no response 7

Not applicable 9

12. Our next question is about general concerns parents may have with feeding their preschooler. I will read a list of concerns. Please tell me if you are very concerned, somewhat concerned or not concerned after I read each one.

My preschooler (**READ STATEMENT**):

Are you very concerned, somewhat concerned or not concerned about that?

	Very Concerned	Somewhat concerned	Not concerned	Don't know	No response	
Eats a limited variety of foods.....	1	2	3	8	7	1/20
Has a poor appetite.....	1	2	3	8	7	1/21
<hr/>						
Eats too much fat.....	1	2	3	8	7	1/22
	Go to bk 1	Go to bk 1	Go to bk 2	Go to Q.14..	Go to Q.14	
<hr/>						
Doesn't drink enough milk.....	1	2	3	8	7	1/23
Eats too much sugar.....	1	2	3	8	7	1/24
Doesn't eat enough vegetables.....	1	2	3	8	7	1/25
Doesn't eat enough meat.....	1	2	3	8	7	1/26
Eats too much junk food.....	1	2	3	8	7	1/27
 Do you have any other concerns about feeding your preschooler that I haven't mentioned?						
Other (<i>specify</i>) _____						
Are you very, somewhat or not at all concerned about that?						
.....	1	2	3	8	7	1/26
 Other (<i>specify</i>) _____						
Are you very, somewhat or not at all concerned about that?						
.....	1	2	3	8	7	1/27

Subject ID#
ID/1/1-4

BOOKLET 1 - CONCERNED GROUP
("VERY CONCERNED/SOMEWHAT CONCERNED" FOR "EATS TOO MUCH FAT" IN QUESTION 1)

13. The rest of our questions focus on one of the concerns you mentioned. We are interested to learn more about parents' concern that their preschoolers eat too much fat.

What are some of the reasons why you are concerned about that?
(RECORD RESPONSE)

REASC/1/28-47

PROBE: Any other reasons?

14. The next few questions are about preparing and buying foods. Is there anything you generally do when preparing foods for your preschooler that makes them lower in fat?

Yes (doing something) 1 (GO TO Q. 15)
 No (not doing anything) 2
 Don't know 8 (GO TO Q. 16)
 No response 7
 Not applicable 9

PREP/1/48

15. What are you doing?

(RECORD RESPONSE OR CIRCLE APPROPRIATE ANSWER)

IF MENTION GENERAL PRACTICES, PROBE: Can you tell me more about that?

Can you tell me how you do that?

PROBE USING RESPONDENTS OWN WORDS:

You just mentioned you (USE RESPONDENTS WORDS) do you do anything else like that when preparing foods?

PROBE: Are you doing anything else?

PROBE: Anything else?

BPREP/1/49-69

	used	not used	
Bake or broil foods instead of frying.....	1	2	BPREP/1/70
Trim fat from meat.....	1	2	BPREP/1/71
Use non stick spray or teflon pans.....	1	2	BPREP/1/72
Drain fat from meats.....	1	2	BPREP/1/73
Remove skin from chicken	1	2	BRPEP/1/74

16. Next I'd like you to think of buying foods. I'm wondering if there is anything you do when you buy foods to lower the fat that your preschoolers eats?

BUYFOOD/2/01

Yes (doing something) 1 (GO TO Q. 17)

No (not doing anything) 2
 Don't know 8 (GO TO Q. 18)
 No response 7
 Not applicable 9

17. What are you doing?
 (RECORD RESPONSE OR CIRCLE APPROPRIATE RESPONSE)

IF MENTION BUY LOWER FAT FOODS OR LESS HIGH FAT FOOD -

PROBE: Can you give me an example of foods you may buy?

PROBE USING RESPONDENTS OWN WORDS:

You just mentioned you (USE RESPONDENTS WORDS) do you do anything else like that when buying foods?

PROBE: Are you doing anything else?

PROBE: Anything else?

BBUY/2/02-22

	used	not used
Buys leaner cuts of meat	1	2
Buys lean/extra lean ground beef	1	2
Buys 1% milk.....	1	2

BBUY/2/23

BBUY/2/24

BBUY/2/25

18. We've talked about preparing and buying foods to lower fat. Next, I'm wondering if there are any foods you don't give your preschooler or that you limit because of fat?

CUTFOODS/2/26

Yes (doing something)	1	(GO TO Q. 19)
No (not doing anything)	2	} (GO TO Q. 20)
Don't know	8	
No response.....	7	
Not applicable	9	

19. What foods do you not give your preschooler or that you limit?
(RECORD RESPONSE)

(IF MENTION HIGH FAT FOODS IN GENERAL, PROBE: Can you give me an example of a food that you limit or don't give?

PROBE USING RESPONDENTS OWN WORDS

You just mentioned you (USE RESPONDENTS WORDS) do you limit or avoid giving your preschooler any other foods like that?

PROBE: Any other foods?

PROBE: Anything else?

BCUT/2/27-47

20. When you are choosing foods for your preschooler do you substitute one food for another to try to reduce fat?

SUBFOODS/2/48

Yes (doing something) 1 (GO TO Q. 21)

No (not doing anything) 2

Don't know 8 (GO TO Q. 22)

No response..... 7

Not applicable 9

21. Can you give me some examples of what you do?

(RECORD RESPONSE)

(IF MENTION LOWER FAT FOODS IN GENERAL, PROBE: Can you give me an example?

PROBE USING RESPONDENTS OWN WORDS:

You just mentioned you **(USE RESPONDENTS WORDS)** do you do anything else like that?

PROBE: Any thing else?

PROBE: Anything else?

BSUB/2/149-69

22. We've been talking about what you do for your preschooler to lower fat. Would you say that what you serve to your preschooler is generally what everyone else in the family eats or is it different?

DIFF/2/70

same	1	} (GO TO Q. 23)
different 2 (GO TO Q. 23)		
usually the same	3	
other	4	
don't know	8	
No response	7	
Not applicable	9	

23. Can you tell me what is different?
(RECORD RESPONSE)

BDIFF/2/71-80

24. Next I'll read several statements about what parents may believe about fat that preschool children eat. Please tell me if you agree or disagree with the statements, or if you are uncertain.
(CIRCLE A, D, U or NR)

	agree	disagree	uncertain	No response	BELIEF
Preschool children should eat low-fat diets *	A-3	D-1	U-2	NR-7	/3/01
Foods like chips or chocolate are okay for preschoolers to eat once in a while	A-3	D-1	U-2	NR-7	/3/02
A preschooler who eats lots of fat is more likely to get heart disease later on *	A-3	D-1	U-2	NR-7	/3/03
Preschoolers should eat both higher-fat and lower-fat foods	A-3	D-1	U-2	NR-7	/3/04
Since preschoolers are small they don't need much fat *	A-3	D-1	U-2	NR-7	/3/05
A preschooler who eats lots of fat is more likely to have a weight problem later on *	A-3	D-1	U-2	NR-7	/3/06
Cutting out fat would make it difficult for preschoolers to meet their energy needs	A-3	D-1	U-2	NR-7	/3/07
A preschooler who eats lots of fat will want lots of fat when they are grown up *	A-3	D-1	U-2	NR-7	/3/08
It is best to limit a preschooler's fat intake*	A-3	D-1	U-2	NR-7	/3/09
Foods that are high in fat have no place in a preschoolers' healthy eating *	A-3	D-1	U-2	NR-7	/3/10
The amount of fat a preschooler eats doesn't make a difference in their chance of getting a disease like cancer	A-3	D-1	U-2	NR-7	/3/11
It is important for preschoolers to have fat in their diet	A-3	D-1	U-2	NR-7	/3/12
Foods like cheese, eggs or peanut butter can be part of healthy eating for preschool children	A-3	D-1	U-2	NR-7	/3/13
Fat can be important for preschoolers to help meet their energy needs	A-3	D-1	U-2	NR-7	/3/14

* negative statement

25. The next question is about what you may have heard or read about fat for adults.
Are you aware of any guidelines on what fat intake should be for adults?

IF NOT SURE PROBE: What's on your mind? What are you thinking?

AWAREA/3/15

Yes.....1 (GO TO Q.26)

No2

Don't know8 (GO TO Q.27)

No response.....7

Not applicable9

26. What do the guidelines say? (**RECORD RESPONSE**)

PROBE: Is there anything else you have to add?

KNOWA/3/16-31

27. Are you aware of any nutrition messages that talk about how adults should include lower fat and higher fat foods in their eating pattern?

IF NOT SURE PROBE: What's on your mind? What are you thinking?

AWARE_A/3/32

Yes.....1 (GO TO Q. 28)

No2

Don't know8 (GO TO Q. 29)

No response.....7

Not applicable9

28. What have you heard? (**RECORD RESPONSE**)
PROBE: Is there anything else you have to add?

KNOW_A/3/33-53

29. The next question asks where parents get information on feeding preschoolers. As you know, people get information from many sources. I'm wondering where you get your information on feeding preschoolers? You can give me as many sources as you like.

(DO NOT READ LIST - CIRCLE ALL THAT APPLY)

PROBE: Are there any other sources?

	Mentioned		SOURCE
	yes	no	
Product labels	1.....	2.....	/3/54
Radio/TV	1.....	2.....	/3/55
Friends/relatives/coworkers	1.....	2.....	/3/56
Magazine articles	1.....	2.....	/3/57
Parenting magazines	1.....	2.....	/3/58
Food advertisements	1.....	2.....	/3/59
Books	1.....	2.....	/3/60
Newspapers	1.....	2.....	/3/61
Family physician/nurse	1.....	2.....	/3/62
Health association materials (Heart & stroke, Cancer society etc.)	1.....	2.....	/3/63
Food company materials (milk, beef, egg marketing board, becel margarine, Heinz)	1.....	2.....	/3/64
Fitness/weight loss programs	1.....	2.....	/3/65
Dietitian/nutritionist	1.....	2.....	/3/66
Internet	1.....	2.....	/3/67
Naturopath	1.....	2.....	/3/68
Canada's Food Guide to Healthy Eating	1.....	2.....	/3/69
Common sense/own instinct	1.....	2.....	/3/70
Cookbooks	1.....	2.....	/3/71
Other (RECORD RESPONSE)	1.....	2.....	/3/72-82
Don't know	1.....	2.....	/3/83
No Response	1.....	2.....	/3/84
Not Applicable	1.....	2.....	/3/85

30. From the sources of information you just mentioned, can you tell me what the information says about fat and feeding preschool children?

IF NOT SURE PROBE: What's on your mind? What are you thinking?

AWARE_C /4/01

Yes.....1 (GO TO Q. 31)

No2

Don't know8 (GO TO Q. 32)

No response.....7

Not applicable9

31. What have you heard? (**RECORD RESPONSE**)
PROBE: Is there anything else you have to add?

KNOW_C /4/02-22

32. The last few questions are background questions about you and your family. They help us know if the parents we talk to represent all parents of preschool children in Manitoba.

First of all, how many people live in your home, including yourself?

HOUSESIZE/4/23-24

(RECORD RESPONSE) / / /

no response 77
not applicable 99

33. How old are your children, starting with the youngest?
(RECORD RESPONSE)

OFFICE USE ONLY

of children under 18 years / / /

AMTCHILD/4/25-26

Not applicable 9

of preschool children / /

PRESCHOOL/4/27

Not applicable 9

Ordinal position of target child / / /

ORDINAL/4/28

Parental status

PARENT/4/29

First time parent 1

Other children 2

Not applicable 9

34. What is the highest grade in school or year at college you have completed?
(DO NOT READ LIST - CIRCLE RESPONSE)

RESPEDU/4/30

grade 8 or less.....	01
some high school	02
completed high school	03
some post secondary training (non university)	04
post secondary certificate or diploma.....	05
some university	06
completed university (has degree)	07
post-graduate training.....	08
describe if foreign education	09
don't know	88
no response	77

35. Are you currently employed full time, part time or not employed outside the home?
(DO NOT READ LIST - CIRCLE RESPONSE)

RESPEMP/4/31

Full time (30+ hours/week)	1
Part time (<30 hours/week).....	2
Not employed outside the home	3
Other (specify)	4
Don't know	8
No response	7

36. The next question is your age category. Are you:
(READ LIST - CIRCLE RESPONSE)

RESPAGE/4/32

19 years or younger.....	1
20 to 30 years.....	2
31 to 40 years.....	3
41 years or older	4
Don't know	8
No response	7

37. Are you married or living with a partner, divorced, separated, widowed or never married?
(DO NOT READ LIST - CIRCLE RESPONSE)

MARITAL/4/33

married or living with partner..... 1 (GO TO Q. 38)

divorced/separated..... 2

widowed..... 3

never married..... 4

other (specify)..... 5

no response..... 7

(GO TO Q. 41)

38. Now for your spouse/partner. What is the highest grade in school or year at college he/she has completed?
(DO NOT READ LIST - CIRCLE RESPONSE)

PARTEDU/4/34-35

grade 8 or less..... 01

some high school..... 02

completed high school..... 03

some post secondary training (non university)..... 04

post secondary certificate or diploma..... 05

some university..... 06

completed university (has degree)..... 07

post-graduate training..... 08

describe if foreign education..... 09

don't know..... 88

no response..... 77

not applicable..... 99

39. Is he/she currently employed full time, part time or not employed outside the home?
(DO NOT READ LIST - CIRCLE RESPONSE)

PARTEMP/4/36

Full time (30+ hours/week)..... 1

Part time (<30 hours/week)..... 2

Not employed outside the home..... 3

Other (specify)..... 4

No response..... 7

Not applicable..... 9

40. The next question is his/her age. Is he/she:
(**READ LIST - CIRCLE RESPONSE**)

PARTAGE/4/37

19 years or younger.....1
 20 to 30 years.....2
 31 to 40 years.....3
 41 years or older.....4
 No response.....7
 Not applicable.....9

41. The last question is about your family income. What is your best estimate of your family's total income, before taxes and deductions, from all sources in the past 12 months? Was the total household income:
(**READ LIST - CIRCLE RESPONSE**)

INCOME/4/38-39

Less than \$40,000?

Less than \$10,000?.....01
 Less than \$20,000?.....02
 Less than \$40,000?.....03

More than \$40,000?.....04

Less than \$50,000?.....05
 Less than \$60,000?.....06
 Less than \$70,000?.....07
 Less than \$80,000?.....08
 Over \$80,000?.....09

Don't know.....88

No Response.....77

This concludes our questions. Thank you very much for participating.

As I'm sure you have realized, many of the questions we have asked today are about fat that preschool children eat. Before I let you go, I wanted to quickly tell you what is currently recommended by Health Canada with respect to fat that young children eat. (**SEE DEBRIEF SHEET**)

Do you have any questions about feeding preschoolers? (**PAUSE-ANSWER QUESTIONS**)

42. Would you be interested in receiving a summary of the results of this project when it is completed?

Yes 1
 No 2
 No response 7

RESULTS/4/40

43. We have a pamphlet about feeding preschoolers. Would you like us to mail you a copy?

PAMPHL/4/41

no 2 (SAY) Thank you very much for participating in our survey.

Yes 1
 no response 7
 Not applicable 9

44. With your permission I will pass on your name to Manitoba Milk Producers who are mailing out the pamphlet. Would that be okay with you?

yes 1
 no 2
 no response 7
 Not applicable 9

**NOTE: CHECK ON PAGE 2, Q.1 TO SEE IF RESPONDENT RECEIVED THE LETTER)
 IF RESPONDENT DID NOT RECEIVE THE LETTER SAY:**

I would like to double check that I have your correct address since you did not receive the letter about the study. Is your address (READ OFF CALLING LIST)?

IF INCORRECT ADDRESS, THEN RECORD CORRECT ADDRESS ON CALLING LIST

Thank you again for participating today.

(RECORD IF RESPONDENT IS MOTHER OR FATHER)

RESPSEX/4/42

Mother 1
 Father 2
 Other (specify) 3

Interviewer Observations

Subject ID# _/_/_/_/ ID/1/1-4

BOOKLET 2 -NOT CONCERNED GROUP
("NOT AT ALL CONCERNED" ABOUT "TOO MUCH FAT" IN QUESTION 1)

13. The rest of our questions focus on one of the concerns mentioned. We are interested to learn why some parents are concerned that their preschooler eats too much fat and others are not.

Could you please tell me what some of the reasons why you, in particular are not concerned?
(RECORD RESPONSE)

PROBE: Any other reasons?

REASNC4/43-60

14. The next few questions are about preparing and buying foods. Is there anything you generally do when preparing foods for your preschooler that makes them lower in fat?

PREP/1/48

Yes (doing something) 1 (GO TO Q. 15)
 No (not doing anything) 2
 Don't know 8 (GO TO Q. 16)
 No response 7
 Not applicable 9

15. What are you doing?

(RECORD RESPONSE OR CIRCLE APPROPRIATE ANSWER)

IF MENTION GENERAL PRACTICES, PROBE: Can you tell me more about that?
 Can you tell me how you do that?

PROBE USING RESPONDENTS OWN WORDS:

You just mentioned you (**USE RESPONDENTS WORDS**) do you do anything else like that when preparing foods?

PROBE: Are you doing anything else?

PROBE: Anything else?

BPREP/1/49-69

	used	not used	
Bake or broil foods instead of frying.....	1	2	BPREP/1/70
Trim fat from meat.....	1	2	BPREP/1/71
Use non stick spray or teflon pans.....	1	2	BPREP/1/72
Drain fat from meats.....	1	2	BPREP/1/73
Remove skin from chicken	1	2	BRPEP/1/74