Barriers to good nutrient intakes during pregnancy: A qualitative analysis

Andrea Begley

Abstract

Objective: To identify barriers to initiating and maintaining dietary change for pregnancy.

Design: A descriptive qualitative study using focus groups.

Subjects: Ninety women of child-bearing age who were planning a pregnancy or currently pregnant.

Setting: Women were recruited from antenatal classes, infant health clinics, community groups and articles in community newspapers in two health service regions in Perth, Western Australia between August 1999 and April 2000.

Main outcomes measures: Barriers identified by participants to good nutrition for pregnancy.

Analysis: Transcripts were analysed for common themes using the QSR.NUD*IST program.

Results: The five barriers identified were: nutrition which was just one of a range of health issues women were dealing with when pregnant; a lack of knowledge and advice received on what are good nutrient intakes for pregnancy; the promotion of listeria awareness was seen as giving food a negative connotation; general practitioners (GPs) were identified as lacking nutrition knowledge and having limited time to discuss nutrition; and printed educational materials did not contain sufficient detail.

Conclusions: There is a lack of consistent educational and promotional efforts for general nutrition in pregnancy, particularly from GPs. There is a need to design and implement effective and consistent strategies to improve nutrient intakes during pregnancy to meet public health nutrition objectives in Australia. The use of focus groups provides important insights into the nutrition-related beliefs and attitudes of pregnant women for the design of such efforts. (Nutr Diet 2002;59:175–80)

Key words: pregnancy, nutrition education, barriers, qualitative analysis

Introduction

Promoting good nutrition for women and children is identified as one of four key priority areas for public health nutrition in Australia by the Strategic Intergovernmental Nutrition Alliance (SIGNAL) (1). Maternal nutrient intake and weight gain have long been documented as the main factors associated with birth weight and other infant health outcomes (2). Little is known about nutrient intakes during pregnancy in Australia. The limited evidence available suggests that intakes of some nutrients by pregnant women in Australia are marginal (3,4). Optimal nutrient intakes have the potential to result in numerous benefits. The recent evidence linking maternal nutritional status to long-term health benefits has refocussed attention on the relationship between nutrition and health during this stage of the lifecycle (5). Improving nutrient intakes should ultimately result in a reduction in health care costs.

While research continues to seek clarification on the roles of specific nutrients during pregnancy, sufficient evidence has been published relating energy intake to maternal and foetal weight gain (6). The role of folate in preventing the occurrence of neural tube defects is now well documented (7). There is also sufficient evidence linking food infected with the bacteria listeria monocytogenes to increased rates of miscarriage and stillbirth (8). The design of subsequent education strategies for women of child-bearing age regarding folate and listeria in Australia has resulted in major awareness and behaviour changes (9,10).

There is however, no other evidence published on the effectiveness of general nutrition education strategies for pregnancy in Australia. Clinic or community-based nutrition interventions have been successful in improving dietary intakes for pregnancy in other countries and provide evidence that these changes may continue after the pregnancy is completed (11,12). It has been suggested that pregnancy is a time when a woman’s motivation to improve health can be capitalised (13,14). The content of nutrition education has been demonstrated as being important. Research demonstrates that education programs designed to only increase knowledge have limitations in their outcomes (15,16). This type of education is not specific enough to promote or enable behaviour change. Factors such as beliefs and attitudes are also important influences of the behaviours of pregnant women and should be incorporated in the design of nutrition education strategies (17).

Dietitians are trained specifically in delivering nutrition education for pregnancy but other health professionals who have regular contact with pregnant women are not. This may become a barrier to improving nutrient intakes during pregnancy (13). Little research has been conducted on the preferred channels for nutrition information while planning a pregnancy or currently pregnant. This type of information is essential for the development of effective nutrition education strategies. Qualitative research methodology is useful at this point in

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assessing specific behaviours of the target group (18). In nutrition education, qualitative research methods, specifically focus groups, have been useful for obtaining specific, in-depth information and identifying common themes that can be used to adapt or develop appropriate programs or materials for research or education programs (19). Using focus groups, this study aimed to identify the barriers to initiating and maintaining dietary change for pregnancy.

Methods

Women who were either planning a pregnancy or currently pregnant were recruited from two randomly selected health services areas in Perth, WA, during 1999 and 2000 to participate in focus groups. A variety of methods were used for recruitment. Invitations were given to women attending antenatal classes at the public hospital in each health service area, women attending infant health clinics or local women’s community groups, such as a first mothers’ group and a family nurturing centre. Women also responded to articles placed in local community newspapers. The focus groups were conducted in a variety of community locations and in both day and night so as to maximise participation. Women were invited to discuss general health issues for pregnancy and offered ten dollars cash incentive and refreshments. No effort was made to separate women planning a pregnancy and women currently pregnant. A sample size of 100 women attending approximately ten groups was selected based on a review of the literature and advice received from a qualitative researcher (personal communication, Greg Hamilton, 1999).

The focus group sessions were conducted by a moderator trained in the use and conduct of focus groups and a research assistant co-moderated and tape recorded the sessions as recommended (20). At the start of each group, each participant was asked to complete a demographic questionnaire and confidentiality agreement. The moderator then gave instructions on how the session would be conducted. A list of questions developed by the investigator was used in each group (see Table 1). Each focus group lasted approximately 60 minutes. The assistant moderator then transcribed the tapes and added relevant notes taken during the sessions. Copies were made of all tapes and the investigator checked transcripts against the tape for accuracy before analysis. The investigator also checked the notes made by the assistant moderator against the transcripts for major themes.

The questions used by the moderator were developed through a review of the literature and refined to address the predisposing, reinforcing and enabling variables in the PRECEDE (Predisposing Reinforcing Enabling Constructs in Educational/Environmental Diagnosis and Evaluation) model for health promotion planning. The model conceptualises behaviour as multi-factorial, complex phenomena and illustrates that any attempt to change behaviour must consider several factors (21). Predisposing factors include a person’s knowledge, attitudes, beliefs and perceptions that facilitate or form barriers to change. Enabling factors are seen as those skills, resources or barriers that can help or be a barrier to the desired behaviour change. Reinforcing factors are the rewards received and the feedback the person receives from following the behaviour changes.

Ethical approval for the study was obtained from the human ethics committee of Curtin University of Technology and the hospital ethics committees of both health service areas. A pilot group was conducted with pregnant women from the general staff on the university campus to test the responses to the developed questions. Minor modifications were made to the ordering of questions and subsequent groups were held between August 1999 and April 2000.

Analysis

The demographic and pregnancy-related characteristics were tabulated using SPSS (version 4, SPSS Inc, Chicago, 1998). The transcripts from the groups were analysed for common themes using QRS NUD*IST (version 4, Qualitative Solutions and Research Pty Ltd, Melbourne, 1994).

Results

Sample characteristics

From 108 women who confirmed their intention to attend a group, 90 women attended 16 groups. The actual attendance at each group varied. It was necessary to run more groups than originally planned to accommodate those who expressed interest in attending and to ensure that all possible responses to the questions were covered. The majority of participants were aged 25 to 29 years (see Table 2). This is similar to the proportion of women giving birth in

<table>
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<tr>
<th>Table 1. Outline of focus group interviews</th>
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<tr>
<td>1. What are important issues to do with your health and your baby’s health?</td>
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<td>2. Who consciously planned to get pregnant? What specific things did you do in this planning?</td>
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<td>3. What foods or nutrients should a pregnant mother eat to have a healthy baby?</td>
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<td>4. Do you feel you’ve been able to change your diet? Has anything to do with pregnancy changed what you eat?</td>
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<td>5. With the things that you have changed in your diet, do you feel you will stick to these after your pregnancy, or do you intend to stick to them, or did you stick to them?</td>
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<td>6. When did you first get information about nutrition for pregnancy?</td>
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<td>7. Did you feel that everyone around you was commenting on what you ate and drank? How do/did you feel about that?</td>
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<td>8. Did you want to make changes but you couldn’t find information?</td>
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<td>9. There are lots of comments made about nutrition in pregnancy, what do you think about:</td>
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<td>a) Trying not to gain too much weight so that your labour is easier because the baby is smaller?</td>
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<td>b) Do you think that what you eat in pregnancy will affect your baby’s health later in life?</td>
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<td>10. Who should be providing information on nutrition in pregnancy?</td>
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<td>11. What would be the best way to get nutrition information to pregnant women?</td>
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WA at that time. The major difference was that the majority of the study sample had undertaken some or completed tertiary level education.

The majority of women were married (three quarters). Just over one third, were employed in administrative or secretarial jobs, another third worked in professional or semi-professional employment, and 14 listed house duties as their usual occupation. At the time of interview more than half of the women were not working. Nearly half of the participants had household incomes above $40 000, one quarter had incomes between $25 000 and $40 000, 14 women had an income less than $25 000 and 14 women did not give income figures or did not know. Seventy-nine women had been born in Australia and the major group born outside of Australia came from the UK accounting for seven of the 90 women.

The women were asked a number of questions regarding their pregnancy status. One third of the sample were currently pregnant and two thirds of these women had not planned their pregnancy and were in the third trimester. The remaining two thirds of the sample had recently had a pregnancy and five of the 90 women indicated they were currently planning a pregnancy. All women were asked whether they would be planning a pregnancy in the future, and two thirds of these women had not accounted for seven of the 90 women.

Relative importance of good nutrition for pregnancy

Women were asked what they believed were important health issues for pregnant women as an introductory question. Good nutrition was mentioned in equal prominence with quitting smoking and drinking alcohol and maintaining exercise. The discussion surrounding the concept of good nutrition was specifically related to the concern with listeria infections and the consumption of adequate folate to prevent neural tube defects.

Um, I guess the most important one I have been concentrating on is diet and um, what I should be eating and what I shouldn’t and what is dangerous and what isn’t.

There was a small amount of discussion related to concepts of being more conscious of what they ate and eating a healthier diet in general. Women who indicated that they had planned to get pregnant had mentioned having taken folate supplements as their main nutrition-related consideration. A GP was the main source of this advice, but other sources of information such as reading pamphlets and informal discussions with friends and family were also acknowledged.

I made sure I had all the right foods and everything. All the nutritious stuff like folic acid…

Lack of general nutrition knowledge

An important finding arose from the initial discussion on health issues. Many of the participants expressed concern about whether they were consuming sufficient types and amounts of foods for weight gain. They said they did not receive information on these topics. The women did acknowledge that good nutrition for pregnancy was something that many just know about and were more likely to think about, but there was uncertainty as to what were sufficient serves of food for a healthy pregnancy.

...you know, I often wonder, cause you try to, without having a checklist on the fridge, saying yes. I’ve eaten my bit of this and that and yeah, it’s balanced today or over the last 2 days and I’m still eating all of this and taking my supplements and I do wonder…

While not a commonly held belief, a few participants raised their belief that the baby is essentially acting as a ‘parasite’ and therefore what the mother ate was secondary as the baby’s nutritional needs for development would be met irrespective of what the mother ate.

I was going to say that the baby will probably be all right no matter what, it is you who is going to suffer. But not to condone not caring or having care for nutrition, but I think the baby is being looked after.

Preoccupation with avoiding Listeria infections

Listeria was overwhelmingly the most discussed nutrition-related topic in all the focus groups. There was total agreement on the potential devastating impact of listeria, the responsibility and guilt of not avoiding certain foods and the difficulty in finding consistent information.

...you’re wondering what can I eat?

Like, I work with two other women who are pregnant and one is extreme and she won’t eat anything which could possibly have the tiniest risk and then the other one is more laid back. And you sort of think which one is right and sometimes you can go into a panic if you eat something and realise that you’re not meant to have it, and think, oh my God, have I done something dreadful?

Very strong emotions were expressed about the guilt attached to making possible ‘wrong’ food choices and the unwanted responsibility they had of constantly thinking about what they were eating. All of the groups discussed the difficulty in selecting suitable foods, particularly when away from the home.

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<th>Table 2. Demographic characteristics of focus group participants</th>
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<td>Number of participants</td>
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<td>Age (years)</td>
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<sup>(a)</sup> Personal communication, C. Bower, Institute for Child Health Research, WA, 1999.
I’ve actually got quite upset when I’ve eaten something of risk when I’m out and I can’t have it and I think, why do I put myself through this? You’re going to have to take some risk during the nine months.

The women also spent time debating among themselves, which were the foods to avoid, and what pamphlets they had and what they had been told. There was some consensus that they needed more detailed information and they felt there was inconsistency between current information sources.

Experiences with general practitioners

Experiences with the medical profession, especially GPs, were discussed extensively among the groups in relation to a question on where they received information on nutrition and where they thought they should be receiving information. If women had received nutrition information, most acknowledged that GPs had given them this information or they had collected educational materials from the GPs’ rooms. They discussed their experiences and raised concerns about GPs’ knowledge of good nutrient intakes for pregnancy and the amount of time GPs spent discussing nutrition with them.

It’s not that he wasn’t a nice person, in fact he’s my normal GP and I’m usually very happy with him, but I’ve found that he is very much a generalist and his attitude was if you are healthy, this is a normal process, people do it everyday, all the time, like you’ll be right… But I wanted to know, but how and what if and what about that…

Women who were having or had had two or more children found that GPs made an assumption that they already knew everything and spent even less time with them.

…your GP says, yep, congratulations, see you later. They presume you know everything from your first pregnancy which I found was quite a concern because there still might be something that has happened since the first, something that might be new.

While the discussion of GPs was concerned with the quantity and quality of nutrition information they gave out, they were the number one source from which participants thought they should be getting nutrition education. The women saw the provision of education as an important role of GPs, even if it was in the form of printed educational materials. This study confirms other findings that pregnant women in this research acknowledged printed educational materials, like pamphlets, as usually being useful sources of nutrition information. These women were unlikely to have bought books or used a library. Pamphlets were seen as easy to read and had the advantage of being free, but there were concerns about the depth of information covered, the perceived conflicting advice between pamphlets and the usefulness of their actual format.

They had things on calcium; health department leaflets on iron, folate and fibre, so there was a whole bunch of health department leaflets. I found them a little bland. Not really focussed on what I needed to do to increase my calcium.

Apart from GPs and pamphlets, the participants were unable to discuss any other major sources of nutrition education.

Discussion

Achieving optimal nutrient intake for pregnancy is widely recognised as important, but relatively little is known about the factors that influence the dietary intakes or the effectiveness of education in Australia. Expert reports from the US, Canada and the UK highlight that women are motivated to improve dietary intakes for pregnancy and make changes in line with recommendations when given appropriate education (16,22–23). The results from this qualitative study highlight five major barriers to good nutrition for pregnancy. The barriers identified are: the relative importance of good nutrient intakes; the lack of general nutrition knowledge of the women; a preoccupation with avoiding listeria infections; experiences with GPs; and the content and design of printed educational materials. This study confirms other findings that pregnancy is a time when women do consider what they eat, but they acknowledge they are addressing a range of health issues including quitting smoking and drinking alcohol and maintaining exercise (24). Good nutrition is one of a myriad of health issues a woman needs to consider when planning a pregnancy or while actually pregnant. Little is known about how women make multiple behaviour changes for pregnancy and this warrants further investigation.

The lack of experiences with nutrition education and the lack of detail discussed regarding dietary changes required for pregnancy is of concern for dietitians. There were exceptions with the folate and listeria issues. The focus groups indicated that women talked generally about healthier eating but acknowledged that they did not always know what this actually meant for pregnancy. It may be that women are struggling with making multiple behaviour changes and therefore only make a few related to food. It has been documented that almost all women who give birth in Australia receive some antenatal care (25). It is not known what proportion receive nutrition education as part of that care. It certainly appears that these women experienced little nutrition education in their antenatal care. Not one participant discussed receiving large amounts of nutrition education as part of their preparation for pregnancy or during antenatal care. It has been documented in the UK that the quality and quantity of dietary advice varies (12). However, the participants had responded to promotion of listeria and folate as food-related issues. This demonstrates that pregnancy is a time
when public health nutrition messages can be successfully communicated (10,26).

Listeria was the most outstanding single food-related issue for pregnant women raised in this research. Although listeria advice is a food safety issue, the problems with avoiding foods because of the possibility of listeria risk have implications for good nutrient intakes during pregnancy. There were 62 cases of Listeriosis reported in Australia in 1999 and 66 in 2000 (27). The number of births in Australia for 1999 was 257 394 (28). It is concerning that comments related to listeria overshadowed any positive comments about what good nutrient intakes might achieve in pregnancy. Many foods high in folate, iron, fibre and other nutrients that pregnant women are advised to eat may be a source of listeria and women need to weigh up the risk of infection with that of an adequate dietary intake. In WA, there has been strong promotion concerning the risk of listeria and awareness has been documented as being very high among women in the target group (10). Results from other areas in Australia suggest that listeria awareness may not be as high (29). The perceived seriousness of the conditions that result from ingestion of listeria and inadequate folate consumption appeared to drive the focus on these two issues and motivated women to make dietary changes (30). This indicates that women could benefit from similar education programs on other important nutrition issues like maternal weight gain and its relationship to low birth weight. The focus groups’ results also demonstrate the lack of a comprehensive nutrition education program covering all issues from the short-term food safety issues to longer-term nutritional concerns.

In this study the GP was acknowledged as the major source of information on nutrition for pregnancy, followed by printed educational materials. The GP was universally criticised as being too busy to spend time in education and not knowledgeable enough concerning nutrition. The focus on GPs as opposed to other health professionals highlights the limited nutrition education experiences of the groups. The contact that women have with health professionals when planning a pregnancy or when actually pregnant is important to consider for the education of pregnant women. There is evidence that it provides an advantageous source for immediate education or referral to other sources of nutrition education (14).

Canadian research has found that women who did not gain sufficient weight in pregnancy were less likely to have spoken with their physician at the beginning of their pregnancy about weight gain (31). There is little other investigation on the effectiveness of nutrition education for pregnancy received from GPs.

Printed educational materials were also discussed as sources of nutrition information in this study but there was concern with their content. Printed educational materials are useful for education as they are easy to refer to when consumers feel they need information and are usually available free (32). Printed materials have been documented as the most popular form of receiving documentation for pregnancy in two recent UK studies (33,34). There is no other evidence available in Australia at present on the use or effectiveness of materials developed for pregnancy.

GPs and other health professionals who have contact with women during pregnancy need effective printed educational materials for distribution. It is important that an extensive needs assessment and consultation process is used when designing materials. More research is required on the content and format of these materials for pregnancy. It appears that pregnancy is a time when these are used and valued by the target group.

The combination of lack of contact with other health professionals and lack of education received by this group would suggest a need for dietitians to become more actively involved in nutrition education of other health professionals. More training on nutrition for GPs, midwives and other nursing staff should be a useful intervention. This may be through the hospital system in antenatal care provision or through a community-level approach. Antenatal classes have been the traditional method for delivering pregnancy-related education (14). The lack of nutrition education received from such classes observed in this research may be due to low participant attendance, lack of nutrition coverage or ineffective nutrition education being delivered. There needs to be a review of how nutrition education is being delivered to confirm these results.

Implications for practice

The limitations of subject self-selection and sample size must be considered in the interpretation of these results but they appear to suggest that there are several barriers to good nutrient intakes for pregnancy. The focus groups suggest that nutrition education for pregnancy is currently a low priority in policy and program development and resource allocation. Nutrition education should be an integral part of hospital and/or community-based antenatal care in Australia. Interventions consisting of effective education strategies during pregnancy can reduce poor birth outcomes (23). It is time to research the most effective methods for the delivery of education and examine the priorities in content of antenatal care and community programs. Dietitians need to assess the training of other professional groups who in the course of their work may offer nutrition advice regarding pregnancy. Access, availability and acceptability of recommended food choices also influence nutrient intakes. These did not feature as major barriers to good nutrient intakes in this research. Considerable efforts have been made in other countries to improve the nutritional status of pregnant women with a move towards evidenced-based practice (22,23,35). This study provides a starting point to develop effective public health nutrition strategies for pregnancy in Australia in line with proposed actions by SIGNAL in Eat Well Australia (1).

Acknowledgments

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