



'I mean I expect that it's pretty safe': Perceptions of food trust in pregnancy – implications for primary health care practice

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RESEARCH

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Abstract

Background

Pregnancy is a time in which food choice is of particular importance. Trust in the food supply and those who regulate it is receiving greater acknowledgement because of the influence of trust on food choice. No prior investigation into pregnant women and food trust has been conducted.

Aims

This paper identifies factors that determine the nature and extent of pregnant women's trust in food; sources of information which influence pregnant women's food choices; and how trust impacts on pregnant women's food choices.

Method

In-depth interviews were conducted with 13 pregnant women; nine were pregnant with their first child and four were in their second or subsequent pregnancy.

Results

Food choices of pregnant women were predominantly influenced by nutrition and perceived quality of food. Risk-taking behaviour, such as the consumption of foods considered high risk during pregnancy, was common amongst participants. The sample was characterised by a dependence on expert information, limited reflexivity in

relation to food safety, and contradictory practice such as risk-taking behaviours in regard to high risk foods were observed.

Conclusion

Further research is needed to confirm findings in this study. Research into consumption of high-risk foods and the information received from healthcare providers would be useful in creating a clearer understanding of whether provision of information is sufficient in communicating risks and promoting a healthy pregnancy.

Key Words

Trust, Food choice, Pregnant, Women, Qualitative Research

What this study adds:

1. Exploration of the area of trust and its impact on pregnant women's food choices
2. Consumption of high-risk foods during pregnancy is an area which needs further investigation
3. The importance of health care practitioners in providing pregnant women with reliable, evidence based information

Background

Regular antenatal care plays an important role in the identification and reduction of risks to mother and child during pregnancy and is associated with positive child health outcomes.¹ It offers the opportunity for health professionals to discuss and support health behaviours conducive to a healthy pregnancy such as abstaining from alcohol and smoking, and increasing awareness of important dietary considerations during pregnancy. Specifically, pregnant women have increased nutrient requirements² and are more susceptible to food-borne illness due to hormone changes preventing rejection of the foetus.^{3,4}

Food-borne illness during pregnancy, such as *listeriosis*, can result in still-birth or miscarriage.⁴ Therefore food safety practices and avoidance of high-risk foods (such as processed meats, pates and soft cheeses) are crucial during pregnancy.⁵ Making appropriate food choices during pregnancy, however, can be complicated as pregnant women are the recipients of multiple sources of information and recommendations;⁶ and consequently may



unnecessarily increase levels of anxiety about food choices.⁷ Thus trust in the safety and quality of food, including trust in the mechanisms that regulate the food supply, and trust in expert recommendations about what to eat is crucial in order for pregnant women not to be made to feel anxious during pregnancy, and to support healthy food choices.

An abundance of definitions and theories exist to explain the concept of trust.⁸ In the context of public health however, trust has been defined as an “optimistic acceptance of a vulnerable situation based on positive expectations of the intentions of the trusted individual or institutions.”⁹ Trust affects three areas which are of significance to public health nutrition, namely: food choice, expert advice such as dietary guidelines; and recommendations, and food regulation.¹⁰

Food choice

Trust influences food choice and consequently food intake and nutrition status.¹⁰ In situations where foods are not trusted they are likely to be avoided, and in extreme cases entire food groups may be eschewed altogether.¹⁰ This has the potential to lead to nutrient deficiencies and poorer health.¹¹

Expert advice

Consumer trust in expert advice and authoritative institutions is important for the efficacy of public health campaigns.¹⁰ Outbreaks of food-borne illness can lead to a loss of public trust in the integrity of the food supply,¹² and this distrust can erode credibility in experts and institutions. This was seen in the Bovine Spongiform Encephalopathy (BSE) crisis in Europe which resulted in decreased trust in expert advice and regulatory bodies.¹³ Consequently when there is a loss of trust in the government and experts' public health messages are seen as less credible.¹⁴

Food regulation

The gap between food production and consumption has increased dramatically, such that consumers know little about their food.⁸ Therefore consumers have to rely on the food regulation system for the provision of safe food.¹⁵

Food regulation

The gap between food production and consumption has increased dramatically, such that consumers know little about their food.⁸ Therefore consumers have to rely on the food regulation system for the provision of safe food.¹⁵ Despite Australia having one of the safest food supplies in the world, fears regarding pesticides, preservatives and additives in food have been identified in the Australian populations.¹⁷ While research by Henderson¹⁸ and

Holmberg²⁰ indicates that Australians can have high levels of trust in the supply and may feel able to trust the regulation of food, trust cannot be taken for granted. Trust has to be continually won and safeguarded. The public's trust in the food regulation system is important to monitor, as its decline can have negative public health consequences as seen in countries affected by the BSE.

Mostly studies on food trust have been at the general population level (see Henderson¹⁸) although some studies have dealt with specific groups, such as young people. However, the impact of trust on the food choices of pregnant women is unknown. Given the importance of trust in food decision-making, and the need for healthy eating habits during pregnancy, it is important to understand the role of trust in the food choices of pregnant women.

This paper reports on an exploratory study into Australian pregnant women's trust in the safety and quality of the food supply. Three general questions were used to guide the study.

1. What factors determine the nature of food trust in pregnant women?
2. What sources of information influence pregnant women's food choices?
3. How does food (mis)trust impact on pregnant women's food choices?

Examination of food trust in pregnant women has received little prior investigation. Therefore a qualitative approach was appropriate to explore these questions. Qualitative methods are useful in research into areas with limited existing knowledge and can provide the opportunity to explore participants' experiences, in their own words.²² Furthermore, the flexibility of qualitative design enables ideas to be explored in-depth.¹⁴

Method

Recruitment

An information sheet explaining the study was distributed widely and participants were recruited at numerous locations where pregnant women frequent, including physiotherapy and yoga for pregnancy classes and an obstetric clinic.

Identifying participants who are information rich is an important component of qualitative research.²³ Thus purposive sampling was used to recruit participants for this study. Initially this was achieved by recruiting primigravid pregnant women aged 18 years or above as literature suggests that they are conscious of their food during pregnancy.²⁴ However, through an iterative process whereby data collection and analysis occurred



simultaneously, it became clear that the experiences of multigravid women, for comparison, were also important. Thus recruitment was widened to include this group.

Methods

Data collection occurred through semi-structured in-depth interviews. Interviews allow participants to provide details of their experiences and enable queries about the meanings participants attach to them.²² An interview schedule guided the interviews; however the semi-structured nature provided some room for exploration of arising issues.²⁵ The schedule was developed from previous interview schedules used in trust research and was piloted with two pregnant volunteers. As the research progressed additional issues were discovered and included in subsequent questioning, although a set same core questions remained throughout the interviews. All interviews were audio-taped with permission from participants, and then transcribed verbatim. Ethics approval of the study was gained from the Flinders University Social and Behavioural Research Ethics Committee.

Analysis

Data analysis was conducted at three levels. First order analysis involved construction of categories in relation to responses to the interview schedule questions. A summary of the first order analysis was sent to participants, who confirmed that their views were represented. Second order analysis was performed to examine the data from a theoretical lens to generate ideas to frame the data. Third order analysis was performed to review the data collected in relation to the research questions. The three orders of analysis enabled systematic description and interpretation of the data.¹⁰ During the analysis process, the audio files and transcripts were reviewed twice to code the data and generate themes. Regular consultation between authors regarding the generation of themes and categories occurred to assist with reliability of analysis. This also included the secondary author reviewing audio tapes of interviews. NVivo version 8 software was used to code and manage data.

Results

In all, nine primigravid women and four multigravid women were recruited for in-depth interviews. A description of the participants is given in Table 1.

First order analysis

Three dominant categories were identified in the first order analysis of interview data including: food choice; pregnancy and advice; and, pregnant women’s experience of food and trust.

Food choice

The most common influences of food choice for the pregnant women interviewed were informed by nutrition and food quality. Below are excerpts of interviews that highlight the importance of nutrition for participants.

Table 1: Names (given for research), age, occupation and number of weeks gestation of research participants

Name	Age	Occupation	Weeks gestation
Lucy*	30	Undisclosed	24
Amanda	31	Sales representative	36
Hayley	29	Journalist	26
Ellen	28	Sales assistant	32
Alex	29	RN/research assistant	29
Ruth	37	RN/research assistant	30
May	27	Student	32
Laura	32	Mediator	32
Helen	32	Interpreter	22 ^b
Amy	26	Student	26
Bethany	24	Hospitality	12 ^b
Renee	28	Child care	20 ^b
Nadia	28	RN	19 ^b

(*all participants were given pseudonyms)

‘It’s all about whether it’s nutritious or not so just mainly buying whole food –Alex. (#1)¹’

‘I mean I try to buy fruit and vegetables and have fruit and vegetables in every meal and that’s generally; that was before I was pregnant but I’m sort of more aware of it now.’ Hayley, (#1)

Quality, in terms of freshness, such as the appearance of food, was another key influence of food choice for many of the participants interviewed.

‘At the butcher I think more what looks like the freshest. Sometimes you go somewhere and if it’s been open it looks a bit dry at the top. I’d probably avoid stuff like that.’ Laura, (#1)

Pregnancy and advice

The second dominant category related to advice on eating during pregnancy, specifically in terms of food safety. This category can be broken into three sections: everyday

¹ (#1) indicates participant was pregnant with first child, (#2) indicates participant was in second/subsequent pregnancy.



practicalities; need for evidence; and lack of advice and response to conflicting advice.

The majority of respondents indicated that food safety was an everyday practicality. Choice gave respondents the option of having a variety of food, thus avoiding consuming high-risk foods. The comment below represents a view shared by many of the participants.

'I think its [cold meat] easy to avoid. I think there is enough other food choices to be made to not have to eat things that are not recommended during pregnancy.' Hayley, (#1)

When questioned about whether the evidence supporting food safety advice was important for compliance, most participants indicated that it would be helpful, but not essential. This is seen in the quotes from participants below.

'No because I think I'd still cut those things out anyway, just in case - I don't want to be the one out of a million, you know? It would just be interesting to know how they [authorities] start off the list.' Helen, (#2)

'With those particular things [referring to a list of foods to avoid] no because like I said before it's not difficult, just not to have them. I mean I don't need to eat ham you know? So because it's easy for me not to do it I haven't sort of saw any real evidence about it.' Alex, (#1)

Another common theme that emerged from the data was the lack of food safety advice provided by experts. Respondents were aware that their caregivers did not always discuss food safety advice.

'The doctor didn't really say anything about food safety that I am aware of and neither did my obstetrician.' Lucy, (#1)

'Not really, I mean I know he [the doctor] has given us some pamphlets but not really sat down with us and given us the whole run down of this, this and this[food safety advice].' Amanda, (#1)

'Well I got a facts sheet first from my doctor telling me what I should eat, like it does tell you a bit to avoid but not a lot.' Ellen, (#1)

Thus for many participants, advice from experts especially doctors regarding food safety during pregnancy was limited.

The importance of trust in caregivers was highlighted when participants were asked about how they would respond to conflicting advice such as being told a food is safe. Common responses from participants can be seen in the following excerpts.

'I would probably speak to my doctor or midwife because they're the sort of people that deal with this stuff every day.' Ellen, (#1)

'I'll just, if I hear any conflicting information I'll ask the doctor.' Amy, (#1)

Overall, most women interviewed indicated that in response to the conflicting issue regarding a food to avoid they would seek expert opinion or research the topic themselves. However, for a few participants the chance of risk was great enough to avoid the food altogether.

'You know the risk of eating it and having something happen is just not worth the risk. The baby can't choose what to eat so if you just eat it and not even think about it then, you know, I don't like that idea.' Helen, (#1)

Pregnant women's experience of food and trust.

Participants reported numerous personal practices they use to increase their trust in the safety of food they eat. These practices occurred during different stages from purchase to consumption. For example, in selecting foods for purchase some participants checked fresh produce for blemishes or the integrity of packaging. Other practices regarding home food storage and consumption practices that increased trust in food were discussed, such as:

'I am trying to eat things as quickly after purchase as possible'... 'I rarely have food wastage because I am only buying as much as we can eat for a few days because I don't want food hanging around too long to pick up potential problems.' Hayley, (#1)

Interestingly consumption of high-risk foods, such as processed meat, was reported by many women, despite them being aware of the recommendations advising against the consumption of these foods. This was predominantly reported in later stages of pregnancy for primigravid women and throughout pregnancies of multigravid women.

'I was more strict at the start of the pregnancy because I was worried about everything.' Lucy, (#1)

'I am probably a little bit more relaxed this second pregnancy as opposed to the first one. I was very,



very strict and I thought something I was going to put in my mouth was instantly going to hurt the baby. So I'm a bit more relaxed this time around and I probably eat a few more things that I was probably a little bit more careful or cautious of the first time.' Helen, (#2)

In summary, first level analysis of the interview data highlighted a general theme that the majority of pregnant women were mostly interested in the nutritional and other qualities of food. Trust in food, or the systems that made food safe, was not of high priority. However, trust in expert and caregiver advice was of obvious importance, even though many admitted that food safety during pregnancy was not fully discussed by their doctor or obstetrician.

Second order analysis

Second order analysis provides an opportunity to examine the data through theoretical 'lenses', in order to explore in-depth, explanations of food and trust and pregnant women. Three specific theoretical perspectives are of use.

Confidence - blind practice

The notion of trust comes with a number of pseudonyms, such as 'confidence' and 'faith'. According to Luhmann²⁶ the experience of confidence can be understood to exist when an individual holds surety about an expected outcome that is free from disappointment; that is to say, when an alternative position has not been considered. Luhmann²⁶ maintains that this is contrary to trust. Trust, according to Luhmann,²⁶ exists where the possibility of risk has been actively considered, and, as a consequence, an action is chosen with the knowledge that the action may not in fact eventuate in the predicted outcome.²⁷

In this research, confidence is the best way to describe the perception that pregnant women interviewed had about the safety of the Australian food supply. For them, there was no reason to question the safety of the food available, thus they did expect to have to explore other possibilities. The excerpt below demonstrates this perception well:

'I mean I expect that it's pretty safe. I think so; I hope so.' Nadia, (#2)

The pregnant women in this study also demonstrated Luhmann's understanding of confidence in their food purchases by not seeing food as harmful to themselves or their families. Confidence was also displayed through the investment in the judgements of experts whose advice was generally unquestioned.

Thus it would seem that for the majority of respondents that the safety of food and reliability of expert advice is an expectation and alternatives not countenanced. Meyer and Ward²⁸ have suggested that this level of confidence should be seen as 'dependence'; where consumers do not weigh up risks and alternative options and accept the *status quo* as unquestioned. Dependence is the opposite of reflexivity, which is discussed below.

Reflexivity - deliberative practice

Beck suggests that daily activities involve an element of risk due to unknown consequences that may result from advances in science and technology.²⁹ Beck²⁹ refers to this concept as the 'risk society.' The risk faced by modern society has been further discussed by Giddens³⁰ who suggests that in modern society there is a need to continually assess and reflect on situations. This has been termed reflexivity and 'involves review and modification of personal practices in view of new information'.³⁰

Reflexivity in this research is apparent in the consideration by participants of nutrition, which was important for most of them. The following quote from one of the participants summarises the increased awareness of nutrition during pregnancy shared by participants.

'I am just more conscious of nutritional value than I think I was before.' Hayley, (#1)

Another demonstration of reflexivity of pregnant women interviewed is evident in the personal practices they use to increase their belief in the safety of their food through measure in food storage, consumption, visual inspection, use-by dates etc. Here they are actively taking measures to ensure safety is within their level of control, as part of an overall consideration of risk. Yet, knowing something is risky does not always lead to ways to mitigate the risk. This is shown in the next section.

Logic of practice – contradictory practice

Bourdieu explored the concept of contradictory practices in his theory of the 'logic of practice'. He asserts that individuals can have 'logic without having logic as its principle'.³¹ In other words, an individual can act in such a way that lacks rational logic but which the individual considers practical. Pregnant women in this study appeared to have contradictory practices particularly in regard to compliance with food safety recommendations. The participant's comment below highlights a general contradiction that arose in many of the interviews regarding compliance to advice around high-risk foods.



'I follow it [list of foods to avoid during pregnancy] because I've only got nine months to follow it, big deal, just don't do it if you're not sure. I guess I do follow it to a degree but then I would sometimes eat ham and fritz.' Helen, (#2)

When questioned, most women in the study were aware of advice about the dangers of eating high-risk foods, such as processed meats like ham, during pregnancy. By *rational* logic, they would have been expected to avoid these foods during pregnancy. However, further discussion revealed a considerable proportion of women consumed high-risk foods. This was often reasoned through a *personal* logic held by participants; for example, they only consume processed meats when they are cut fresh from the place of purchase, and consumed within a short period of time after purchase. Holding these two ideas of rational logic and personal logic simultaneously did not appear to be contradictory to the participants because they trusted their practices to limit risk.

Parity also appears to influence contradictory practices. Women in this study who were in their subsequent pregnancies said they were less strict now in compliance of recommendations such as avoiding high-risk foods as their first babies were healthy. Consequently several of these women reported to be consuming small amounts of alcohol in their subsequent pregnancy. This is something they reported to not engaging in their first pregnancy due to concern of risk. Contradictory practices were also seen in the sources of information on eating participants reported to seek. Specifically, despite most participants suggesting that they distrusted the internet, it was common for pregnant women to use internet searches to answer a food-related query. Thus although it would seem that women were aware of food safety advice to avoid high-risk foods and appeared sceptical about the internet as a credible source of information, this did not stop them from consuming high-risk foods and searching the internet as they were practical activities.

Discussion

Third order analysis

This third level of analysis will discuss the research aims in light of the findings and contribution to progressing the aims of the study.

The first question informing this study concerned factors that determine the nature of pregnant women's trust in food. The interview data suggests that the pregnant women interviewed were most likely to consider nutrition and

quality such as freshness in food choice, than to consider trust. Increased nutrition awareness during pregnancy has been found elsewhere.³²⁻³⁴ One study by Olson³⁵ found a two-fold increase in positive dietary behaviours during pregnancy such as eating breakfast daily.

Quality and freshness of food were also regarded to be important. Röher *et al.*³⁶ has identified these to be the most important criteria when purchasing food. Although not specific to pregnant women, Röher *et al.*'s³⁶ findings are similar to the results of this study in that quality in terms of freshness was a commonly discussed factor for food choice. Overall, trust in food and in food systems were not a high priority for the participants in the study. There appeared to be an expectation by them that foods offered for sale were safe and wholesome. The women were likely to place trust in their own practices as ways of mitigating the risks associated with food safety during pregnancy, even when their practices were at odds with expert advice.

The second question framing the study concerned sources of information that influence pregnant women's food choices. Participants were trusting of their own practices including the selection, handling and preparation of their own food. This is a similar finding to other studies whereby people are very trusting of their personal practices in regards to food.^{10,20,37,38}

Participants reported accessing multiple sources of information on eating including: experts, literature, lay persons and the internet. Experts such as doctors and midwives were considered most trustworthy, which is similar to findings of other studies.^{6,39,40} It was, however, common for participants to report that the information provided by experts was limited. This was similar to the findings of Trepka *et al.*⁴¹ whereby participants perceived a lack of information provided by experts. The fact that information from doctors and other caregivers was limited on the subject of food safety during pregnancy is of concern. The women in this study clearly saw the experts who took care of them during pregnancy as important and trusted sources of advice.

The final question to be addressed by the study concerned an examination of how (mis)trust impacts on pregnant women's food choices. The data suggests that there is minimal distrust of the food system and reveals that some participants take risks such as consuming high-risk foods. There are several factors that could influence this. Firstly, risk-taking behaviours were generally reported to occur in the later stages of pregnancy for primigravid women who reported feeling more confident in eating as they perceived



their risk of miscarriage to have decreased. Additionally multigravid women were less worried about eating during subsequent pregnancy as has been identified in Fox et al.⁴³

Secondly, risk-taking behaviours such as eating processed meats were rationalised by participants despite their knowledge of risk. Often discussed were methods such as getting meat cut fresh and consuming on the day, which gave the perception that it was safe to eat; however listeria can grow on meat at refrigerated temperatures and guidelines recommend avoiding them altogether.⁴⁴ As noted earlier, Bourdieu³¹ suggests that contradictory practice can be rationalised if an individual considers it practical. It would seem that for many women engaging with high risk foods is a practical part of their daily food routines and thus their consumption can be rationalised. This also appears to have been the case for participants in other studies.

Implications

The purpose of this study was to explore opinions of pregnant women. The self-selected nature of the participants means that views of individuals included in this study may be different to those in the wider population. Qualitative studies, however, rely more on the information richness of participants than representativeness as a sign of quality.²³ Another consideration is that most participants were in the later stages of pregnancy; this means that views of people in earlier pregnancy may not have been explored. However, the fact that most participants were in their later stages of pregnancy meant that they were able to discuss their experiences of pregnancy with reference to earlier stages of pregnancy and allow for comparison between these stages.

Regardless of possible limitations of the study, this research provides an insight into pregnant women's perception on trust in the food supply an area which has previously been unexplored. The research holds important implications for primary health care practice. Firstly, the data collected highlights a possible lack of information provided to pregnant women regarding food safety by experts. This is significant in that pregnancy has been identified as a time whereby health promotion can be capitalised as women are very receptive. Furthermore the study suggests that many pregnant women may be consuming high-risk foods and thus placing themselves at risk of food-borne illness. Provision of sufficient accurate information should be a priority for health promoters.

Further research should be conducted to gain an understanding of pregnant women's consumption of high-

risk foods and their perception of the food safety advice provided by experts.

Conclusion

To our knowledge this is the first study to investigate the role of trust in the food choices of pregnant women. The qualitative results presented here are exploratory and are not intended to be generalised to all pregnant women; however the findings suggest that pregnant women are concerned with nutrition and quality in regard to food choice rather than the safety of food. Increased nutrition awareness during pregnancy reflects findings of previous studies. Analysis showed that generally pregnant women were not reflexive in regard to food safety in food choice; rather they were dependent on the safety of the food system and the provision of safe products. Many pregnant women were also willing to take risks with food such as consuming high-risk foods despite being aware of food safety advice demonstrating contradictory practice.

These findings highlight the need for clear evidence-based information regarding food safety to be provided to pregnant women to dispel common myths. Further research into this area should include quantitative design and explore pregnant women's consumption of high risk foods and their perception of food safety information provided by experts.

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The authors declare that they have no competing interests. We also declare that all the authors have approved the final version of this manuscript.

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Flinders University Social and Behavioural Research Ethics Committee (Project Number SBREC 4185).