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Barriers to the uptake of healthy eating messages by Black African immigrant pregnant women living in the UK: midwives' perspectives

Aniebiet Ekong, Pramod Regmi , Juliet Wood, Jaqui Hewitt-Taylor

ORIGINAL RCM/JLA RESEARCH PRIORITY 1

Abstract

Objectives

This article is part of a study that explored the barriers and facilitators to the uptake of healthy eating messages by Black African immigrant pregnant (BAIP) women living in the UK, from the perspective of the midwives that care for them.

Methods

Using the methodological principles of constructivist grounded theory (CGT), 26 semi-structured interviews were conducted, with 19 of the interviews with midwives. Data were analysed using constant comparative analysis towards the development of a substantive theory.

Results

Barriers to offering healthy eating advice related to midwives' understanding of the cultural needs of BAIP women, including the different cultural dynamic. Other barriers related to engagement, communication barriers, knowledge, a lack of resources in the NHS and social determinants of health.

Conclusion

The findings highlight culture as a significant aspect of the identity of BAIP women, and reveal a lack of culturally adapted and sensitive healthy eating resources and discussions in the NHS. Although BAIP women are often considered 'hard to engage', this study suggests that engagement and communication can be enhanced if health care professionals understand the cultural nuances and identities of the Black community.

Practice implications

Without culturally appropriate healthy eating information, the impact of unhealthy food choices may be more pronounced among BAIP women compared to natural-born or second-generation Black immigrant women and their White counterparts.

Introduction

The MBRRACE report (Knight et al 2019) identified an increase in maternal mortality from all causes, with thrombosis and thromboembolism the leading causes of direct maternal death. This highlights the importance of improving pre-pregnancy health, and addressing being overweight and obesity during pregnancy (Rimmer 2024). Evidence indicates that reducing being overweight and obesity can lower the risk of developing thrombosis and thromboembolism (French et al 2020, Hotoleanu 2020). In addition to weight management, strategies such as effective screening and supporting women in the appropriate use of medication form key components of thrombosis prevention.

Notably, maternal health outcomes are not experienced equally across populations. In the UK, Black women are nearly four times more likely to die from pregnancy-related causes than their White counterparts and they also represent 66.6 per cent of the population of women classified as living with obesity (Public Health England (PHE) 2019). It is important to note here that, while obesity is used in this paper to describe a medical condition that some pregnant women may live with, the term should be applied with care and sensitivity in practice. BAIP women from West African nations such as Nigeria and Cameroon also face a greater risk of iron deficiency, compounded by a significant prevalence of Vitamin D deficiency (Ayoya et al 2012, van der Pligt et al 2018, Zegeye et al 2021). In addition, Black women have an elevated risk of gestational diabetes and hypertension (Flanders-Stepans 2000, Knight et al 2019) and are more prone to emergency caesarean deliveries (Henderson et al 2013). These health challenges are exacerbated by post-migration issues, including disparities in maternal care and accessibility (Henderson et al 2013, Higginbottom et al 2019, Peter & Wheeler 2022), experiences of discrimination, communication hurdles and racism (Higginbottom et al 2019). Recent immigrants have also often struggled with navigating the UK health care system (Kapadia et al 2022).

A healthy diet is recognised as protective against various forms of malnutrition and noncommunicable diseases, including diabetes, stroke, heart disease and certain cancers (Branscum & Sharma 2014, FAO & WHO 2019, Cena & Calder 2020). Many countries, including the UK, have established healthy eating guidelines, with midwives ideally positioned to provide advice on nutrition during pregnancy (National Institute for Health and Care Excellence (NICE) 2010). However, data regarding adherence to these guidelines and what influences healthy eating decisions among pregnant women are scarce in the UK, particularly when delineated by ethnicity. Additionally, there is a dearth of literature exploring midwives' perspectives regarding providing healthy eating advice to BAIP women.

This paper reports on part of a study exploring the views of BAIP women and midwives on barriers and facilitators to the uptake of healthy eating messages by BAIP women, focusing on the midwives' perspectives.

Materials and methods

Methods

A CGT approach was adopted to develop meanings around midwives' perceptions. The question asked was: 'what are midwives' perspectives on providing healthy eating advice to pregnant African immigrant women living in the UK?' Participants were recruited using convenience followed by snowball sampling. After the initial interviews, theoretical sampling was used to purposively select potential participants according to emerging categories until theory was developed and no further data were required (Charmaz 2014, Foley & Timonen 2015). Data were analysed using constant comparative analysis.

Participants

Midwives were recruited between January 2020 and January 2021 from NHS trusts with a higher proportion of individuals from the South of London who identified as Black African according to the national census. Recruitment was facilitated by research midwives in trusts who indicated interest in the study. They identified midwives who met the study's inclusion criteria and facilitated contact with the researcher (see Table 1). Midwives who attended a 'Birthing with colour' event in November 2020 were also invited to directly contact AE via email if they were interested in participating. A total of 19 midwives, all of whom had provided care for BAIP women, participated in the study.

Table 1: Inclusion and exclusion criteria

Inclusion	Exclusion
• Qualified midwives who worked at study sites • Midwives who provided care for African immigrant pregnant women	Midwives who had not directly provided care for Black African immigrant women *Rationale*: This study is grounded in the experience of providing healthy eating advice to African immigrant women; therefore, it is essential to include only midwives who have delivered such care

Procedure

One-on-one or focus group interviews took place virtually via Zoom or Microsoft Teams. Interviews lasted between 20 and 60 minutes. Focus groups were used when this was logistically necessary because of service demands for midwives and when acceptable to participants. Virtual interviews were used, as the study occurred during the COVID-19 pandemic. To create a theory grounded in data (Glaser 2007), unstructured interviews without predefined questions are deemed appropriate for extracting relevant information for the phenomenon under study (Foley et al 2021). Therefore, in this study, semi-structured interviews with open-ended questions informed by sensitising concepts (Bowen 2006) were employed. In grounded theory, the notion of sensitising concepts provides an initial frame of reference, offering ideas and directions to pursue in relation to the topic. The interview schedule was therefore designed as a flexible

guide, informed by AE's interests in areas such as forms of healthy eating advice in pregnancy, healthy eating guidelines, eating habits during pregnancy and perceptions of healthy eating. These were used as '*points of departure*' (Charmaz 2006) for shaping interview questions. In grounded theory, sensitising concepts function as provisional tools for generating ideas, which are subsequently refined through analysis. If certain concepts prove unhelpful during data collection, they are set aside, ensuring openness to emergent themes. In this way, new concepts arising from participants' accounts can be pursued, preventing the imposition of preconceived ideas on the data.

The initial guide was informed by literature reviews, collaboration with experts in the field, and interviews with patient and public involvement (PPI) partners. The initial interview guide comprised six open-ended questions, examples of which are shown in Table 2. JW tested the interview guide with midwives not involved in the study and minor adjustments were made to the final version. Interviews were audio recorded, transcribed by AE after each interview, and uploaded to the NVivo PRO 12.5 software for organisation management and to serve as an audit trail (Bringer et al 2006).

Wherever appropriate, hints and probing queries were used during interviews to clarify information. Insights from the data gathered from pregnant women were also used as potential probes. For instance, pregnant women discussed the influence of African myths and taboos, which was subsequently used as a probe in interviews with midwives. The goal was to be receptive to ideas that arose during data collection and prevent data from being coerced to fit predetermined notions. Theoretical saturation was achieved when no new concepts emerged from the interviews. All interviews were conducted by AE, who has qualifications in nutrition and dietetics/public health nutrition, and qualitative interviewing, supervised by JT, who is an experienced qualitative researcher.

Table 2. Interview guide

- How do you offer healthy eating advice to pregnant women?
- Have you ever offered healthy eating advice to pregnant Africans?
  - Prompts
    - What approach does this advice take?
    - Is it different from other types of advice you give?
- What form did this advice take?
  - Prompts
    - Booklets, brochures, pamphlets
- Do you offer the same advice to everyone?
- Do you consider the *Eatwell* guide and pregnancy healthy eating guidelines appropriate to all cultures and social contexts?
- Do you have any other things to say?

Data analysis

Using the constant comparative approach (Charmaz 2014, Ramalho et al 2015), data collection and analysis were iterative, and occurred simultaneously, involving comparing incidents to incidents for the emergence of concepts, concepts to more incidents, and reflective memos for emerging categories and until theoretical saturation was achieved (Corbin & Strauss 2008, Evans 2013, Charmaz 2014). This strategy was also used for the integration of literature during the analysis.

The data analysis involved three coding techniques: initial coding, focused coding and theoretical coding (Charmaz 2014). This process began with transcription, analysis and line-by-line coding of the first interview by AE. Codes were developed by interrogating the data and looking for the action, processes and meanings in the data, rather than coding for the person (Giles et al 2016) to keep the researcher attuned to the realities as presented by the participants rather than any assumptions.

Incidents were compared with similar incidents and code to generate common themes. Sections or phrases that were similar were marked using action words (gerunds) or brief phrases to make sense of the data. These initial codes were viewed as tentative and subject to more advanced analytical possibilities.

The same process was repeated for subsequent interviews. Gaps that emerged in the data or topics that required further interrogation were noted. For instance, 'African women are laid-back' emerged in the early interviews. Although Charmaz (2014) advocates that such gaps should be explored further with the same participants, the nature of the interview, timing and pandemic restrictions rendered this impossible. However, they were further explored during subsequent interviews with other participants (Giles et al 2016). Codes were occasionally changed where other terms could better convey the participants' narratives and context. Illustrative examples of codes and categories, along with their development, are provided in Appendix 2.

Recurrent and outstanding initial codes were organised and grouped into themes. Focused coding entailed a more advanced coding phase where connections among themes were examined and juxtaposed with fresh data to establish categories. This process was cyclical, with the analysis oscillating whenever new strands for consideration emerged. Focused coding was used to compare individuals' experiences, actions and interpretations across different interviews. At this stage, the codes were redefined to enhance their appropriateness. Subsequently, manual analysis using notebooks and Word documents facilitated the provision of a comprehensive view of the data. Reflexivity, theoretical sensitivity and memo writing were used throughout the process to assist in deciding which

initial and focused codes could be used to categorise the data.

The core category was subsequently established by comparing related categories and focused codes. This core category represented the main concept in the data and encapsulated the varied viewpoints in the study.

Ethics approval of research

Ethical approval was obtained from the London Brent Research Ethics Committee Local Research Ethics Committee, the Health Research Authority (HRA), the Health and Care Research Wales (HCRW) and the Bournemouth University Research Ethics Committee. Signed consent was a prerequisite before an interview commenced.

Results

The midwives ranged in age from 18–50 years, with most having between one and five years of work experience (see Appendix 1). The data analysis yielded 10 themes, which were grouped into four main categories and a core category. The core category known as 'the concept of identity: the Black immigrant woman' was used to understand BAIP women's healthy eating, antenatal and immigration journeys. This paper, however, only discusses categories that highlight midwives' views on the barriers to and facilitators of the uptake of healthy eating advice by BAIP women in the UK.

The categories centred on:

1. Culture
2. Engagement
3. System
4. Other determinants.

Although the categories and themes were interrelated, each category discussed participants' perspectives and assumptions.

Each of these themes is discussed in turn and in their categories.

Category 1: culture

Theme 1: cultural needs

Culture was a multilayered concept throughout the data. The importance of cultural norms, taboos and cultural foods was mentioned in interviews with pregnant women (Ekong 2022), especially in relation to pregnancy. Discussions with midwives highlighted an absence or minimal understanding of African cultural foods or dynamics, and some midwives had not fully realised that BAIP women possessed distinct cultural needs. Those midwives who recognised the distinct cultural requirements agreed that these needs were unmet.

The generic content of the UK healthy eating guidelines was viewed as a barrier to meeting pregnant women's needs, with midwives expressing the belief that a less generic approach might increase interest among BAIP women. Most of the participating midwives noted that the healthy eating guide heavily emphasised foods to avoid during pregnancy, rather than providing a comprehensive guide on recommended foods. Additionally, they observed that the guide and advice were notably reflective of British cultural practices.

Conversations with specialist midwives revealed frustrations with the lack of availability of healthy eating resources for pregnant African women, including a lack of referral places within the NHS: women were usually offered generic advice, although some midwives tried to adjust this depending on the woman's diet history or home diet:

'I think sometimes there's, you know, if you yourself aren't that familiar with African food and African culture, then it's sometimes can be a little bit difficult I think because you don't actually know what food people might be eating at home. I don't actually know what is healthy in that, you know, what is it and what gets fried, I don't know the names of any of the food. So that might be difficult if a woman came to me and said, oh, I eat a lot of whatever it is, I wouldn't know what it was to tell her, whether it was healthy or not, if that makes sense.' (M15)

Training sessions were suggested as ways to improve knowledge around food diversity in the NHS.

Theme 2: different cultural dynamics

Several conversations were centred on midwives' perceptions of a different dynamic existing in the African culture that influenced how BAIP women behaved. '*Laid-back*', lack of concern with the pregnancy process, poor attendance at antenatal appointments, '*do as they want to*' and '*poor questioning*' were terms used to define BAIP women:

'*it's difficult to always pick up on that with their sort of laid-back kind of approach. I think it's different culturally and not just culturally, it's the age and the generation in various things. They have very different approaches. I think a lot of it, with the laid-back thing, it is quite a cultural thing really, you know they seem a bit calmer and slower and maybe it's more of an educational thing.*' (M2)

'*I don't know if they are sort of guiding that sort of you know importance around the antenatal care and when they come into to labour. Generally, they're quite laid-back, minimal sort of pain relief and things like that.*' (M8)

Being '*laid-back*' especially hindered effective communication with BAIP women, according to the midwives. However, one midwife attributed the '*being laid-back*' to BAIP women's social support from

friends and family, rendering advice from midwives less necessary. Social support, however, did not fully explain late or missed antenatal appointments. Some midwives also interpreted the '*laid-back*' approach as reflecting the assumption that BAIP women did not see the pregnancy process as medicalised and therefore did not treat it as their White counterparts might. Their White counterparts were described as being more engaged and would attend appointments prepared with questions and actively participate in discussions. Some midwives also recognised that cultural dynamics could influence BAIP women's perception of weight gain during pregnancy. For example, the fact that '*women saw eating well as being healthy*' made it difficult for someone unfamiliar with their culture to discuss healthy eating with them. During the interview process, some midwives reflected on the biases mentioned above. Identifying an entire race using a set of attributes was seen as problematic, and could influence how midwives engaged with that race and vice versa. Training sessions highlighting unconscious bias in the NHS were suggested.

Category 2: engagement

Theme 3: 'hard to engage'

Most midwives admitted to struggling with engagement with BAIP women. The term 'hard to engage' was used to define this and BAIP women were said to be '*not accepting*', '*did not want help*' and '*they do not want to be told*'. Most midwives felt that BAIP women would continue with their established behaviours or practices, despite advice. This was said to influence communication and engagement between midwives and women, although some midwives rationalised these behaviours as women not wanting to exaggerate their pregnancy, having other sources of health advice and generally being strong in pregnancy.

The 'hard to engage' discourse was not evident among midwives who had worked longer than 15 years and among Black midwives:

'*I don't know, I'm gonna be honest, I think as a black woman my experience of caring for Black women is most slightly different to my non-Black colleagues. I think that if they had questions, they would ask me and maybe that's because often they just assume that I'm from an African background anyway so they can identify with me and I do identify with African people anyway, so I don't find that they don't ask me questions…*' (M7)

Some midwives who had worked longer in the NHS believed BAIP women were easier to engage than their White counterparts were, although they would still act as they wished. In terms of offering healthy eating advice, there was an assumption that women knew what they should eat. Some midwives felt that there was enough information on the internet. There was no differentiation with respect to race and the assumption that BAIP women would need help with their healthy eating needs was beneath them; they were as educated as their White counterparts who Googled their information, and any suggestion otherwise would be beneath them. Some midwives suggested that the continuity of carer pathway benefited women from ethnic minority groups in terms of developing and maintaining rapport with their health care providers.

Theme 4: communication barriers

In addition to being '*hard to engage*' in terms of '*not being accepting*' and '*not asking for help*', some midwives highlighted comprehension difficulties faced with BAIP women's understanding and comprehension of the English language. This involved concerns about women's comprehension and their tendency to express themselves differently from their intended meaning, especially during telephone consultations. The significant obstacle of a language barrier was compounded by the inadequacy of translation resources, with Google Translate deemed insufficient by midwives for fostering rapport, a crucial aspect of effective communication. While a few midwives acknowledged that many African women could communicate in English, they stressed their duty of care to ensure accurate understanding of conveyed messages.

'*… But then you realise do they actually understand it and then just go over and just be like, this is what I mean is this how you understand what I'm saying. And then they'll tell you, or you might gather what they're saying is this, and you say is this what you mean. And they say, oh, yes, yes. Or you might cos you might say something and then they might answer completely different, like they didn't understand the question. And then you reiterate.*' (M14)

Theme 5: the need for knowledge

Another barrier to healthy eating discussions was midwives' personal lack or inadequate knowledge of general healthy eating principles, the contents of the healthy eating guide, and the risks and consequences of unhealthy eating in general. This was not specific to African foods.

Theme 6: the fear of stigmatising

In addition to the lack of knowledge, midwives often found healthy eating discussions challenging with body mass index (BMI) discussions referred to as being difficult and labelling, and some people were living with the fear of admitting they had a problem with healthy eating. In addition, one of the midwives noted that her own BMI made the idea of talking about healthy eating difficult:

'*I suppose so yes, but I think I would find it a little bit more difficult for any women who had a larger body size, not just African women. I think just you internalise that sort of thing. Don't you. You know, you don't want to offend people you don't want to talk about it too much. And so, I think for me. The ethnicity isn't what is makes it difficult for me. It's just, I mean I and I have a large BMI myself, so I find it a little bit. A little bit hypocritical as well, sort of saying, Oh, well you know you need you need to eat healthily. Well, I don't clearly see me sat there.*' (M15)

On the other hand, some midwives believed that people generally understood healthy eating and therefore there was no need to talk about it.

Category 3: systems

Theme 6: lack of resources in the NHS

System issues referred to the challenges in the NHS that made healthy eating discussions difficult. Midwives mentioned that healthy eating was not a priority in the NHS. Other issues related to the lack of resources to pay translators; budgets and cuts in the NHS; lack of capacity in terms of dieticians and specialist BMI midwives, especially in more urban areas; lack of time to discuss healthy eating; and no room for individualised care in the NHS. There was universal agreement among midwives in terms of lack of time to discuss healthy eating. The midwives observed that they were tasked with numerous responsibilities in limited time frames and that additional duties were assigned without allocating extra time.

Category 4: other determinants

Social determinants of health, such as finance, accessibility to healthy foods and environmental factors, including the distance people needed to travel to be able to buy healthy foods, were mentioned as barriers to the uptake of healthy eating. Finance was mentioned both by pregnant women and midwives as a barrier to healthy eating. The midwives considered the dietary guidance provided as inappropriate for women who lacked the financial resources to buy the recommended foods. Other barriers to healthy eating included lack of social support, the obesogenic environment and taste.

Discussion

The findings of this study suggest that healthy eating discussions with pregnant women are not a priority in the NHS. If they do happen, for BAIP women there is a lack of culturally adapted and sensitive healthy eating resources to guide these conversations. This is notable, considering that Black women account for around 66.6 per cent of pregnant women classified as living with obesity (PHE 2019). While this paper focuses on healthy eating, it is important to consider it in the broader context of other contributing factors, such as genetics, environment, poverty and culture, all of which can influence weight. Nevertheless, evidence suggests that adopting a healthy diet alongside lifestyle modifications can reduce obesity rates and improve both maternal and neonatal outcomes (Oteng-Ntim et al 2012, Thangaratinam et al 2012, Poston et al 2015, Gresham et al 2016, Dalrymple et al 2018, Shieh et al 2018) including improving the management and outcomes of gestational diabetes and hypertension (Gresham et al 2016).

Healthy eating discussion with BAIP women were impeded by a lack of resources and lack of time available in the NHS. Previous research in the UK has highlighted time as a constraint to offering maternity care in general (McCann et al 2018). In Australia, Arrish et al (2017) identified that time and workload challenges for midwives resulted in healthy eating advice usually being given the least priority. This is consistent with the findings of this study, where midwives compensated for a lack of time by omitting healthy eating conversations.

This study offers new insights into midwives' perspectives on interactions with Black African women. Themes such as 'hard to engage' and descriptions including '*laid-back*' were employed by midwives as qualifying terms. However, these may reflect stereotypical and preconceived or unconscious biases about individuals from specific ethnic backgrounds, with the potential to negatively impact their quality of care. Unconscious bias can potentially lead to false assumptions and poor outcomes (Gopal et al 2021).

Conversely, some Black midwives attributed this demeanour to cultural differences in understanding and perceptions of antenatal care, alongside the prevalent patient–doctor relationship in sub-Saharan African communities, particularly Nigeria, typified by unquestioning deference to health care professionals (Camara et al 2020). These cultural dynamics can influence engagement with BAIP women, as women may be awaiting midwives' guidance, whereas midwives assume that they do not require information. A lack of engagement has been highlighted in other studies as a barrier to the uptake of antenatal care services by minority ethnic groups. Peter & Wheeler (2022) and MacLellan et al (2022) described maternity care experiences among ethnic minority pregnant women in the UK and highlighted insufficient engagement as a significant contributor to negative experiences of antenatal care. In this study, midwives who grasped the cultural nuances and identities of the Black community were more adept at engaging with women, employing various strategies including building relationships with women through the continuity of carer model and group-based care practices. Olander et al (2019) highlighted the importance of midwives developing relationships

with women as facilitators for providing advice on healthy eating and weight management during pregnancy. Previous studies have recognised the continuity of carer midwifery model (NHS 2017) as a positive factor in establishing antenatal relationships in the general pregnancy population (Furness et al 2011) and notably among ethnic minority groups (Puthussery et al 2010, Beake et al 2013, Goodwin et al 2018).

In addition to a lack of engagement, communication challenges arising from language and comprehension difficulties have been identified as significant barriers for these women. This has also been highlighted in a previous study (Rayment-Jones et al 2021). Although the NHS has introduced measures such as translators, language lines and digital tools such as Google Translate, midwives in this study noted that reliance on Google Translate hinders the development of rapport between health professionals and women. This study also highlights the existence and influence of cultural norms and taboos in pregnancy, and how they influence women. Although midwives acknowledged the existence of these, there appeared to be minimal recognition of the role they can play in BAIP women's experiences. Nonetheless, a few Black midwives actively addressed and mitigated the concerns of women who shared their cultural norms and taboos. A common understanding among all midwives was the recognition that pregnancy related myths and taboos exist across various ethnic groups, albeit more pronounced in some than others. As the UK continues to evolve into a more multicultural society, despite the challenges which these pose, it is crucial that health care practitioners familiarise themselves with the predominant ethnic groups in their service areas and understand their specific pregnancy-related customs and practices. While individuals may selectively adhere to these customs, enhancing health care practitioners' awareness can significantly improve their capacity to provide relevant advice when necessary.

Conclusions and practical value

This is the first study in the UK highlighting midwives' perspectives on offering healthy eating advice and, inadvertently, maternity care to BAIP women. The prioritisation of cultural identity by BAIP women, coupled with the lack of culturally appropriate healthy eating advice or support suggest that their healthy eating needs may not be adequately addressed. Without culturally appropriate healthy eating information, the impact of unhealthy food choices may be more pronounced among BAIP women compared to natural-born or second-generation Black immigrant women and their White counterparts. This impact needs to be acknowledged. In addition, although BAIP women may not spontaneously ask for help as indicated in this study, midwives may need to use their professional expertise to navigate cultural barriers, recognise the impact of unconscious bias and assumptions, and to provide help. BAIP women's reluctance to seek help should not be misconstrued as being '*laid-back*' or '*not wanting help*'. Instead, healthy eating interventions and advice should focus on delivering relevant, culturally adapted information that empowers BAIP women to actively manage their diet. This approach should also include an understanding of cultural and religious beliefs that may influence the acceptance of healthy eating messages.

Use of AI tools declaration

During the preparation of this work the author(s) used Grammarly and ChatGPT to enhance the clarity and accessibility of the language in this work. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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Conflict of Interest

All authors declare no conflicts of interest in this paper.

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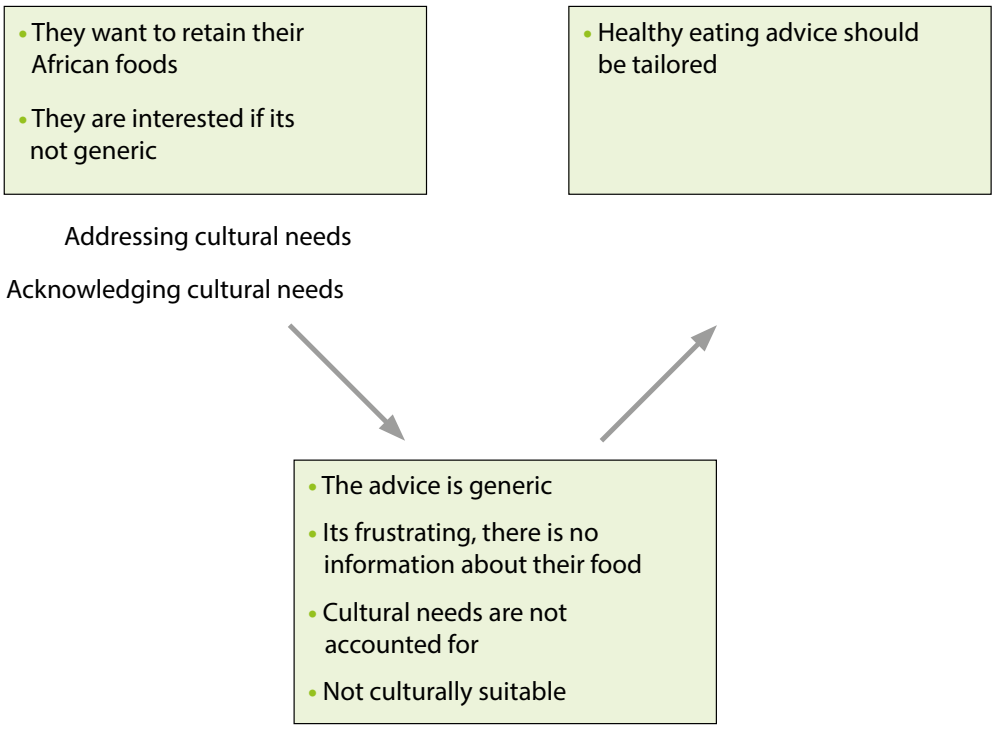
Appendix 1. Midwives' demographics

Age (years)	
18–28 years	4
29–39 years	7
40–49 years	4
50+	4
Level of education	
Diploma in midwifery	4
Bachelor's degree	13
Master's degree	2
Country of birth	
Germany	1
United Kingdom	15
Poland	1
Sri Lanka	1
Burundi	1
Nationality	
German	1
Polish	1
Black British/Nigerian	2
Black British	1
British	12
Welsh	1
Sri Lankan	1
Race	
White	12
Black	6
Asian	1
Years of experience	
1–5 years	10
6–10 years	1
10–15 years	5
15 years and above	3

Category A developed during the coding and analysis of data gathered during the initial interviews. Initial codes that frequently occurred during the interviews addressed the frustration that the midwife felt when they tried to obtain culturally specific information for black African women. Quotes like '*it's frustrating, there is no information about their food*', '*they want to retain their African food*' and '*they need information specific to them*' in response to the suitability of the Eatwell guide for these women, quotes like '*not culturally suitable*' were used. It became important for the researcher to enquire more about the views of others. It is important to note that

Appendix 2. Codes and categories

Category A – **Addressing cultural needs**



culture as a theme has come up during the analysis in different contexts; this first category addresses cultural needs in terms of food.

Category A was constructed on the following focused codes:

Category A: addressing cultural needs:

- They want to retain their African food
- Cultural needs are not accounted for
- It's frustrating, there is no information about their food
- Not culturally suitable
- The advice is generic
- Healthy eating advice should be tailored
- They are interested if it is not generic.

Subsequent categories were developed as analysis of data continued and theoretical sampling was used to provide links and fill gaps.

Category B: improving engagement — referring to how midwives viewed engagement with African women, what the barriers were and how it could be improved:

- Black women are difficult to engage
- They are not accepting — they just nod and do what they like
- They do not ask for it so they are not offered help
- They do not want to be told
- They will always do like they've always done
- Being more relatable improved engagement
- Engagement is improved when people spoke their language
- Managing engagement by improving representation
- Managing engagements through similar groups representation
- You need a good relationship with them to have meaningful discussions.

Category F: communication barriers:

- It's difficult to develop relationships due to language constraints
- We have the responsibility to improve understanding
- We are unsure of their understanding
- Unless they tell me
- English understanding differs English is not a communication barrier
- They say one thing and mean another
- Educated Caucasian women are the easiest to talk to.

Category G: the need for knowledge — knowledge gaps identified by midwives and ways to improve:

- Midwives lack knowledge about risks and consequences

- Midwives lacking knowledge about healthy eating guidelines
- The need for research
- The expectation is that they have adopted the western culture
- Black women need to change their diet
- They are lucky to receive the care they've received
- Increasing discussions about diversity
- Increasing discussions about food diversity.

Category H: healthy eating discussions are hard — referring to the difficulties midwives had in speaking about healthy eating:

- Fear of admitting to having a problem with healthy eating
- I have a large BMI, talking about healthy eating is hypocritical
- People generally know what constitutes a healthy diet
- Based on the assumption that everyone understands what healthy eating is
- BMI discussions are labelling.

Category I: suitability of the healthy eating guide:

- The guide is not suitable for people with no recourse to public funds
- Eating healthy is expensive
- Finance is a barrier to healthy eating
- Not suitable for the social context
- Not culturally suitable.

Appendix 3. Characteristics of studies

Study title and author	Location	Research design	Aim of research	Method	Sample size	Role of participants	General findings
Romijn A, Bakker P, Teunissen, P (2023) Cardiotocography in practice: a qualitative study to explore obstetrical care professionals' experiences with using cardiotocography information in Dutch practice	Netherlands	Interpretivist	Explore obstetric care professionals' experiences using CTG	Focus groups and interviews Conventional content analysis	43	Newly qualified midwives	Further training should be added to educational programmes on team working for team members to learn from colleagues The benefits of further training and that experience is required to feel confident with CTG interpretation Collaborative working should be considered further in training programmes
Uusiku L, James S, Sinti L, Tuhasdeleni O (2022) Midwives' perceptions regarding the use of the cardiotocograph machine as an intrapartum monitoring tool in Namibia: a qualitative approach	Namibia	Contextual Purposive sampling	To explore the perceptions of CTG as a monitoring tool	Semi-structured interviews	17	Midwives	Limited knowledge of those interpreting CTG More CTG training should and continuous refresher courses should be introduced

Engelhart CH, Nilsen ABV, Pay ASD, Maude R, Kaasen A, Blix E (2022) Practice, skills and experience with the pinard stethoscope for intrapartum foetal monitoring: focus group interviews with Norwegian midwives	Norwegian	Contextualism	To explore the knowledge base of midwives who use pinard stethoscope and CTG monitoring during labour	Focus groups and x1 individual interview	21	Midwives	Study looked at midwives who used pinard stethoscopes to auscultate the fetal heart Use of pinard can assist with the knowledge base of electronic fetal monitoring Midwives closer to the woman when not using CTG monitoring
Small K, Sidebotham M, Gambe J, Fenwick J (2021) 'My whole room went into chaos because of that thing in the corner': unintended consequences of a central fetal monitoring system	Australia	Ethnography	Pinard or electronic fetal monitoring for intrapartum midwifery	Interviews, focus groups and observations	34	Midwives and student midwives	CTG undermines rather than enhanes safe maternity care provision That CTG monitoring controlled the labour
Mayes, M, Wilkinson, C, Kuah, S, Matthews, G , and Turnbill, D (2018) Change in practice: a qualitative exploration of midwives' and doctors' views about the introduction of Stan monitoring in an Australian hospital	Australia	Purposive sampling	To reduce unnecessary obstetric intervention	Interviews: semi structured one-to-one interview	18	Midwives and doctors on labour ward`	The need for increased ongoing training and collaborative working Central CTG monitoring has affected communication within the team More training was required for a better understanding of the systems

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