

Dietary practices of pregnant and breastfeeding women following a vegan diet, and underlying determinants: a qualitative study

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Research Article

Keywords: vegan, plant-based diet, pregnancy, lactation, determinants, dietary practices

Posted Date: September 30th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10997062/v1>

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Additional Declarations: Competing interest reported. Jessica Gubbels is a Guest Editor for the Collection to which this manuscript is submitted. The other authors declare that they have no competing

interests.

Abstract

Background

Dietary choices during pregnancy and lactation can have a profound impact on maternal and child health. However, the determinants influencing the maintenance of a vegan diet during these life stages remain insufficiently understood. This study aimed to explore dietary practices and identify the determinants influencing dietary decisions among women following a vegan diet during pregnancy and lactation.

Methods

A cross-sectional qualitative study was conducted in the Netherlands using online semi-structured interviews. Women who followed a vegan diet during their current pregnancy or a pregnancy within the past four years were recruited through social media and a newsletter. Data were analysed thematically using a hybrid inductive–deductive approach, guided by the Theory of Planned Behaviour and Self-Determination Theory.

Results

Between May and July 2023, 29 interviews were conducted. Participants were aged 29–45 years and were all highly educated. They had followed a vegan diet for a median of five years (range 2–23), primarily for ethical reasons, and all had breastfed or intended to breastfeed. Participants demonstrated a high level of nutritional knowledge and actively monitored their dietary intake. Despite limited perceived support from healthcare providers, they felt confident maintaining their diet and relied on informal networks for practical and emotional support. Intrinsic motivation and moral identity appeared to protect participants from social pressure and criticism. Their confidence was reinforced by positive pregnancy experiences and the perceived healthiness of their diet.

Conclusions

Women following a vegan diet during pregnancy and lactation were motivated and well-informed but experienced limited professional support. These findings highlight the importance of health literacy, social support, and identity-driven motivation as determinants of dietary adherence, and the need for inclusive, evidence-based nutrition counselling within antenatal and postnatal care.

1. BACKGROUND

In recent years, more people have adopted a vegan (or strict plant-based) diet; *i.e.*, a diet consisting exclusively of plant-based foods such as fruits, vegetables, legumes, grains, nuts, and seeds, while

excluding all animal-derived products such as meat, fish, eggs, and dairy^[1, 2]. Veganism is often motivated by ethical concerns, with perceived benefits for animal welfare and a reduced environmental footprint^[3, 4]. In Western countries, the majority of individuals adhering to a vegan diet are women of reproductive age, suggesting that a vegan diet during pregnancy and lactation may become increasingly common^[5].

Adequate nutrient intake during pregnancy and lactation is crucial for maternal health, pregnancy outcomes, and the long-term growth and development of the child^[6–8]. Even though the American Dietetic Association states that a well-planned vegan diet is appropriate for all stages of the life cycle, including pregnancy and lactation, research on nutritional intake and pregnancy outcomes among pregnant women following a vegan diet is limited^[9]. A recent systematic review based on five studies found that women adhering to a vegan diet during pregnancy had lower intakes of protein and various micronutrients, and their children had lower birth weights compared to those born to omnivorous mothers^[10]. Vitamin B12 supplementation appeared to be effective in maintaining adequate maternal B12 levels, and women adhering to a vegan diet were less likely to experience excessive weight gain during pregnancy. However, the findings were inconclusive due to the heterogeneity and low quality of the available studies^[10].

More extensive research in the general population has shown that vegan diets are often associated with a lower intake of total protein, vitamins B2, B3, B12, and D, as well as minerals such as iodine, zinc, calcium, potassium, and selenium, compared to omnivorous diets^[11]. These lower intakes, which can potentially cause deficiencies, are particularly relevant during pregnancy. Vitamin B12, essential for nerve function and red blood cell production in the mother and child, is absent in plant-based foods^[12]. Deficiency can lead to neurological impairments and anaemia^[13]. Iron, necessary for oxygen transport, is less bioavailable in plant sources, and maternal deficiency is associated with premature birth and low birth weight^[14, 15]. Anaemia, resulting from e.g., iron or vitamin B12 deficiency, can increase the risk of miscarriage during the first trimester and is linked to higher maternal mortality^[16, 17]. Calcium is vital for bone health and is found in dairy and certain plant-based foods. Calcium deficiency increases the risk of pre-eclampsia, premature delivery, and intrauterine growth restriction^[18, 19]. Iodine, necessary for thyroid hormone production and brain development, is commonly deficient among the general population, which is associated with impaired neurological development in children^[20, 21]. Lastly, protein, which plays a structural and functional role in the body, is also crucial for optimal fetal growth and birth weight^[7].

Dietary choices, including the decision to adopt or maintain a vegan diet, are influenced by a range of psychological and socio-ethical determinants^[22, 23]. Among young adults, intention to adhere to a plant-based diet is predicted by attitude, subjective norms, and perceived behavioural control^[24]. Among pregnant women in general (not specifically on a vegan diet), predicting determinants for strong, healthy eating intentions are perceived behavioural control and subjective norm, followed by a positive attitude and a stronger self-identity as a healthy eater^[25]. In addition, environmental beliefs, health beliefs, and

anti-speciesism values (*i.e.*, rejecting the idea that one species is superior to another) positively influence individuals' attitudes toward adopting a vegan diet themselves, while social stigma has a negative impact^[22]. Maintaining a vegan diet can be challenging due to concerns about dietary adequacy, perceived restrictiveness, the effort required to sustain the diet, and a lack of social support^[23]. The maintenance of a vegan diet is also influenced by emotional and cognitive factors, such as stress, fatigue, habit formation, and self-regulation resources^[26]. Furthermore, vegan mothers often also raise their children on a vegan diet, primarily driven by ethical motivations^[27].

Despite the increasing prevalence of people on a vegan diet, little is known about the specific motivations, attitudes, and behavioural factors that facilitate or hinder the maintenance of a vegan diet during pregnancy. Understanding these factors is important, as dietary choices during pregnancy and lactation can have a profound impact on maternal and child health^[9, 10]. Gaining insight into the socio-psychological and behavioural determinants of vegan dietary practices during pregnancy can inform the development of targeted support programs and interventions. Such initiatives could help ensure that women on a vegan diet meet their nutritional needs during pregnancy and lactation. Therefore, the aim of this study is to explore the dietary practices of women following a vegan diet during pregnancy and lactation, and to identify the determinants that influence their dietary decisions.

2. METHODS

2.1 Study design

A cross-sectional qualitative study using semi-structured individual interviews was conducted between March and May 2023. The COREQ checklist (Consolidated criteria for reporting qualitative research) was used to report this study and is available in Supplement 1^[28].

2.2 Participants and Recruitment

Eligible participants were women residing in the Netherlands who followed a vegan diet during their current pregnancy or a pregnancy within the last four years, who were Dutch or English-speaking. Being on a vegan diet was defined as consuming animal products (*e.g.*, meat, dairy, eggs, honey) less than once per month, consistent with previous definitions^[29, 30]. Recruitment took place between March and May 2023 through social media groups on Facebook, focusing on a vegan diet and parenthood, as well as via the newsletter of the Dutch Association of Veganism. Recruitment continued until data saturation occurred. This was reached when no new themes or explanations were obtained during the interviews^[31]. Potential eligible participants who responded to the recruitment messages were provided with an information letter that outlined the study's aim and procedures, as well as their rights. After deciding to participate in the study, a subsequent interview was planned for April or May 2023. Participants did not receive any incentives for participating in the study. Verbal informed consent was obtained from all subjects at the start of the interview and was witnessed and formally recorded.

2.3 Data collection and instruments

Data were collected by conducting semi-structured interviews. The interviews, which took approximately one hour, were conducted via online video-conferencing software (Zoom) and audio-recorded with the participants' permission. Two researchers (JP and AA) independently conducted interviews, following the same structured interview guide, and held intermediate discussions to reflect on their experiences and maintain consistency. The interview guide (Supplement 2) was developed based on the Theory of Planned Behaviour (TPB), the Self-Determination Theory (SDT), and previous research on a vegan diet during pregnancy^[30, 32–34]. According to the TPB, dietary behaviour is shaped by intention, which is determined by attitude (the evaluation of the behaviour), subjective norm (the perceived social expectations), and perceived behavioural control (the perceived ability to perform the behaviour)^[32]. Knowledge about vegan diets during pregnancy is assumed to influence these determinants^[32, 35]. The SDT emphasises the importance of intrinsic motivation, autonomy, competence and relatedness in sustaining behaviour^[33].

The interview started with general questions on participants' characteristics and background, including age, educational level, residential area (urban/rural), duration of adherence to a vegan diet, the number and age of their child(ren), and, when applicable, the current gestational age. Interviewers also explored participants' food and supplement choices during pregnancy and lactation, as well as their breastfeeding practices. Participants were asked about their motivation for adhering to a vegan diet. Questions related to attitude pertained to how the participant evaluated the healthiness of a vegan diet for pregnant and breastfeeding women, as well as the advantages and disadvantages of the diet. To assess subjective norms, participants were asked about their perceptions of the opinions of significant others (e.g., family, friends, midwives, obstetricians) regarding a vegan diet during pregnancy and lactation. Participants were also asked to evaluate these opinions and their influence on their own decision-making. Perceived behavioural control was questioned by asking which factors were perceived to facilitate or complicate a vegan diet during pregnancy and lactation. Lastly, participants were asked to evaluate their knowledge of a vegan diet during pregnancy and lactation, as well as how they acquired this knowledge.

Interviewers (JP and AA) and project members with scientific expertise regarding a vegan diet, pregnancy, nutritional behaviour, and behavioural determinants (DM, JG) reviewed the interview guide. The interview guide (Supplement 2) was part of a broader protocol that also examined vegan mothers' dietary choices for their children, published elsewhere^[27].

2.4 Data analysis

The audio recordings were transcribed verbatim, pseudonymised, and analysed using NVivo software (version 12, QSR International, Melbourne, Australia), in the original language of the interview to ensure that valuable information was not lost. A hybrid thematic analysis was employed, utilising constructs derived from the TPB and SDT frameworks in a deductive approach, combined with new, emerging themes in an inductive approach^[36]. After familiarisation with the data, a coding tree (code name, definition, transcript example) was constructed by three researchers (JP, AA, and JG) based on the TPB and SDT frameworks. To ensure inter-reliability, two researchers (AA and DM) independently coded 10%

(i.e., three) of the transcripts, resulting in a Cohen's kappa coefficient of 0.80, which indicated sufficient inter-coder reliability^[37]. Subsequently, one researcher (either AA or DM) coded each remaining interview. During the coding process, an iterative approach was used to group codes into subthemes, overarching themes, and related theoretical constructs. Constructs and themes across transcripts were compared and interpreted. Quotes were translated into English and presented to illustrate the different constructs and themes.

3. RESULTS

A total of 29 women participated in the study; their demographic characteristics are presented in Table 1. Participants' ages ranged from 29 to 45 years, and all were highly educated (higher vocational education or university degree). Participants had been on a vegan diet for a median of 5 years (range 2–23 years). Four participants were pregnant at the time of the study, three of whom were expecting their first child. All participants lived together with their partner. All women breastfed their newborns or intended to breastfeed their child after giving birth.

Table 1

Demographic characteristics of participating women residing in the Netherlands who were on a vegan diet during a previous pregnancy and/or who were pregnant during the study

Participant	Age (Y)	Living Area	Duration of vegan diet (Y)	Age Child(ren)	Duration of current Pregnancy
1	33	Urban	5	1 & 2 Y	
2	33	Rural	7	2 Y	
3	35	Urban	4	1 & 4 Y	
4	36	Urban	7	2 & 6 Y	
5	34	Rural	5		30 W
6	32	Rural	5	11 M	10 W
7	36	Urban	7	2 Y	
8	29	Rural	4		29 W
9	39	Urban	5	4 M	
10	34	Rural	5		21 W
11	36	Rural	5	10 M	
12	43	Urban	6	2 Y	
13	40	Urban	7	2 & 4 Y	
14	27	Urban	4	3 M	
15	31	Rural	6	2 & 4	
16	32	Rural	4	2 M	
17	28	Rural	4	1 Y	
18	31	Urban	2		
19	33	Urban	3	10 M	
20	41	Urban	23	2 & 4 M	
21	45	Urban	6	3, 8, 9 Y	
22	33	Rural	7	2 Y	
23	37	Urban	8	1, 4 Y	
24	39	Urban	6	2, 5 Y	
25	31	Urban	4	10 M	
Y, Years. M, Months. W, Weeks					

Participant	Age (Y)	Living Area	Duration of vegan diet (Y)	Age Child(ren)	Duration of current Pregnancy
26	36	Urban	7	1, 4 Y	
27	39	Urban	8	1, 4 Y	
28	36	Urban	9	3, 5 Y	
29	32	Urban	5	1 Y	
Y, Years. M, Months. W, Weeks					

3.1 Vegan diet during pregnancy: dietary practices

Most participants had previously followed a vegetarian diet for some time before transitioning to a vegan diet; some participants changed directly from an omnivorous diet to a vegan diet. After deciding to switch to a vegan diet, most participants gradually transitioned by replacing products of animal origin with plant-based products. During pregnancy, participants generally maintained their pre-pregnancy diets, except for some adjustments during the first trimester due to pregnancy nausea. Many participants mentioned being more aware of the intake of sufficient protein, dark leafy vegetables, and adequate supplements during pregnancy. Nearly all participants used nutritional supplements during pregnancy, most commonly folic acid, iron, vitamin B12, vitamin D and omega-3, sometimes combined as prenatal (vegan) multivitamins. None of the participants craved animal products, while some participants mentioned cravings for sweets or fruits.

The vast majority of participants received additional health checks during pregnancy due to their vegan diet. This was initiated by their obstetrical healthcare professional, or it was planned at the participants' request. These checks primarily involved blood tests for haemoglobin, vitamin D, and vitamin B12 levels. A few participants requested additional ultrasounds to monitor foetal growth. More than half of the women reported having undergone blood tests before conception to ensure optimal health and to ensure continued dietary adequacy during pregnancy. Although all participants recognised the importance of nutrition during pregnancy, several were surprised that healthcare providers focused on their vegan diet, while paying less attention to potentially unhealthy dietary patterns among omnivorous pregnant women. As one participant noted: *'I see pregnant women in my environment going for Chinese takeaway or going to McDonald's; that is something midwives do not ask about during consultations [while they do ask about participants' vegan diet]'. (Participant 10).*

3.2 Vegan diet during lactation: dietary practices

During pregnancy, all participants intended to breastfeed, and those who had already given birth all followed through with this intention. Many participants mentioned changes in their diet during their breastfeeding period. Participants emphasised the importance of adequate vitamin and nutrient intake to support the quality of their breast milk. Some made a conscious effort to include specific foods: *'I eat a handful of nuts every evening, and enough protein, I try to make sure I eat enough legumes'. (Participant*

3). Some were also very aware of the potential influence of their food intake on the baby's colic. All participants took supplements during lactation, mostly similar to or the same as those taken during pregnancy, while some consumed supplements specifically designed for breastfeeding women.

3.3 Determinants of choice for a vegan diet during pregnancy and lactation

3.3.1 Motivation and Intention

Participants mentioned several reasons for adopting a vegan diet at some point in their lives. For most, ethical concerns about animal welfare were the primary motivation: *'I think you should not kill another living animal to eat it.'* (Participant 28). They were often inspired by others in their social environment or by reading articles or watching documentaries about the bio- and/or dairy industry. Some other participants were primarily motivated by environmental and sustainability reasons, while others were motivated by their health. However, most women stayed motivated to maintain their vegan diet because of a combination of reasons: *'The main reason was the ethical aspect, and later I also saw that plant-based food has health benefits, and of course, there is much concern about the environmental impact [of an omnivorous diet]. Those things together actually make the choice even clearer.'* (Participant 8). All participants had intended to continue a vegan diet during pregnancy and lactation; some mentioned that they had never considered changing it.

3.3.2 Attitude

Participants expressed predominantly positive attitudes towards maintaining a vegan diet during pregnancy and lactation. Many highlighted its practical advantages, noting that most foods discouraged by dietary recommendations during pregnancy (e.g., raw meat, certain types of fish, and unpasteurised cheese) are already excluded from a vegan diet: *'It is very nice you do not have to think about 'can I eat this or not'.'* (Participant 21). Some participants mentioned the health benefits they experienced during pregnancy, such as having few pregnancy-related physical complaints, such as constipation. Some women stated they perceived fewer issues with being repulsed by food odours than other pregnant women. Beyond pregnancy-specific experiences, participants also described the general benefits of veganism, including a lower environmental footprint, improved physical and mental well-being, and the sense that their lifestyle inspired others to reduce their consumption of animal products. The participants experienced no disadvantages of being on a vegan diet during pregnancy or lactation specifically. However, many women mentioned the limited availability of vegan food in restaurants and other public places as a general disadvantage of being on a vegan diet: *'Sometimes it is annoying that you have to say to people, 'Can we please order food at another place? Otherwise, there is nothing [vegan] for me to order''* (Participant 24). Some participants also noted feelings of social discomfort or self-consciousness about their dietary choices, particularly when these became topics of conversation in social settings: *'For some people it is weird; my [vegan] diet is always a topic of discussion. It would have been easier just to be normal.'* (Participant 6). Additionally, a few participants mentioned practical difficulties, such as the need to consciously supplement their vitamin B12 intake and ensure adequate

protein consumption. Time and effort involved in meal preparation were also mentioned: *'A simple lunch such as a sandwich with cheese would be very easy, I make it a bit more difficult for myself [choosing to eat vegan]'. (Participant 16).*

3.3.3 Subjective Norm

Most women experienced mixed opinions from their relatives and friends about changing to a vegan diet. Some participants shared that they live in a vegan-friendly social environment, where many others are vegan or vegetarian, and in which their diet is not perceived as extreme. Others, particularly those in more rural settings, had other experiences: *'It [choosing a vegan diet] was not taken very well, but not necessarily badly either. Our mothers needed to get used to us [participant and her partner] being vegan, as they did not really support it.' (Participant 21).* In most cases, participants noted that once they explained their motivations and provided information, the topic became less controversial. However, not all women had this experience. One participant shared: *'Some people just do not want to know about it, or they continue to resist, or, in my opinion, ask annoying questions, as they have already asked those questions many times. I try to put that aside.' (Participant 2).* Many found it frustrating that others questioned the nutritional adequacy of their diet, particularly in relation to protein and vitamin intake: *'No one worries about whether you eat a balanced diet unless you say you are following a vegan diet.' (Participant 28).* Although their veganism was eventually accepted by most of their social circles, pregnancy and lactation often reignited concerns, primarily about the diet's safety for the unborn baby. Participants reported that these concerns were generally alleviated when they reassured others that they had consulted a dietitian or that their midwife supported their dietary choices. Most felt confident in the healthfulness of their diet during pregnancy, which in turn reassured those around them. This confidence was often reinforced by experiencing few physical complaints and observing normal foetal development. Some participants interpreted the concerns from relatives and friends as expressions of care, rooted in a desire to protect and maintain group cohesion: *'I believe that it [concerns about participant being on a vegan diet] originates from families' and friends' love because we are 'group people' (...) for example, my mother (...), she does not want me to deviate from the group, out of love. She just needed to get used to it, and now she is fine with my decision'. (Participant 6).* Others found these concerns harder to manage, especially when feeling physically or emotionally vulnerable during pregnancy: *'I often have to defend myself (...) but if you are tired, or you feel insecure, and you try to do your best for your baby, that is not easy'. (Participant 2).* Despite these experiences, all participants stated that they did not, nor would they, change their dietary practices due to negative opinions from others during pregnancy or lactation.

Most participants' midwives discussed nutrition at some point during pregnancy-related consultations. Many obstetrical healthcare providers only discussed general dietary recommendations for pregnant women. Some midwives commented that the participants needed to consume sufficient nutrients or recommended that they consult a dietitian for nutrition-related questions because of their vegan diet. A few midwives provided additional nutritional advice, including awareness of the daily calcium and omega-3 intake recommendations. Some participants mentioned that their midwives were pleasantly surprised, as they could skip most regular dietary recommendations for pregnant women, such as

avoiding raw meat. A few midwives were not supportive of a vegan diet during pregnancy because they expected nutrient deficiencies.

3.3.4 Perceived Behaviour Control

Most participants expressed confidence in their ability to maintain a vegan diet in the long run: *'I stand by my decision [being on a vegan diet], and the most important thing is that I do it for myself, not for anybody else'.* (Participant 20). Participants identified several factors that facilitated the maintenance of their vegan diet during pregnancy and lactation. These included receiving nutritional information on a vegan diet during pregnancy and lactation, the availability of vegan food in hospitals during and after childbirth, and support from their obstetric healthcare providers. The growing availability of vegan foods in supermarkets and restaurants created an environment where most participants could easily access vegan options. Social support played a key role: participants appreciated family and friends who accommodated their dietary needs at home during gatherings. Family and friends who provide vegan food at their homes or birthday parties and who are supportive and accepting of their dietary choice helped them feel in control: *'Friends of ours are very willing to delve into the vegan diet when they are cooking for us, that is very nice'.* (Participant 26). Many participants enjoyed cooking and experimenting with vegan food, and some experienced a better taste in meals since adopting a vegan diet.

All participants noticed the increased costs of groceries for nuts, meat substitutes, and dairy substitutes. However, most did not let financial considerations affect their food choices: *'We can afford that [higher costs for vegan foods], but if you do not have a lot of money to spend, it can be more difficult to maintain a diet like this'.* (Participant 26). Others pointed out that plant-based eating can also be affordable, depending on food choices: *'If you are a meat-eater and want to eat steak daily, that is pricey. If you are vegan and you want to eat an expensive meat substitute, that is also pricey. But eating lentils and chickpeas as protein is not expensive'.* (Participant 10). Living in a rural area could complicate being on a vegan diet: *'I live in (...), a very small village, and I notice that the selection in the supermarket here is not that good. I am happy if I can find tofu there, which is not always in stock. While at my parents' cafeteria, who live near a big city, I think they have 6 or 7 plant-based snacks on the menu.'* (Participant 2). Some experienced difficulties finding vegan food abroad during holidays: *'I have experienced that in Greece and France, they had no vegetarian food, only meat'.* (Participant 21). Therefore, they found it inconvenient that conscious planning is often needed to maintain their vegan diet: *'The spontaneity of going out for dinner on holiday is gone'.* (Participant 19). Social occasions also posed challenges. Some participants found it difficult to correct well-meaning friends who unintentionally used non-vegan ingredients: *'If a friend tried really hard to cook a vegan meal, and she shows she used cream of cow milk, it is difficult to say that the cream is not good [not vegan]'.* (Participant 19). It was mentioned that the political lobby also makes it more challenging to transition to a vegan diet, as there are still subsidies for animal agriculture that make meat and dairy affordable for most people. Finally, some participants criticised structural barriers such as subsidies for animal products and price differences in cafes for cow's milk and plant-based milk.

3.3.5 Knowledge

Many women felt they had sufficient knowledge about maintaining a vegan diet during pregnancy and lactation. Their understanding was often based on personal research or prior education. Frequently consulted sources included scientific literature, international nutritional guidelines, books, online videos (including those available on streaming services), the Dutch Association of a Vegan Diet website, and social media. Participants actively sought information about additional nutrients required during pregnancy and lactation, as well as how to meet these needs with vegan food and supplements. However, finding reliable information proved challenging for some: *'There are many websites, and you always have to filter for what it is based on, whether the results are scientifically proven or not'*. (Participant 18). Even before they became pregnant, some women consulted a dietitian who specialised in a vegan diet, sometimes because they felt the information they found elsewhere was confusing, inconsistent, or limited. During pregnancy, many participants experienced that obstetric healthcare professionals did not know about a vegan diet and could not provide them with nutritional recommendations. According to participants, healthcare providers themselves often acknowledged this limitation. Some participants, who felt confident in their knowledge about a vegan diet, worried about pregnant women without extensive knowledge: *'If someone chooses a vegan diet but has not looked into it very well, an information leaflet with basic nutritional information would be helpful. That could lead to healthy pregnancies and healthy children. That would be better than ignoring dietary intake or recommending against a vegan diet in pregnancy'*. (Participant 1).

4. DISCUSSION

This study aimed to explore the dietary practices and influencing determinants among pregnant and lactating women who follow a vegan diet. The participants demonstrated a strong awareness of the importance of nutrition during pregnancy and lactation, as reflected in their dietary choices, consistent use of supplements, and proactive health monitoring. This aligns with earlier findings showing that pregnant women are often motivated to optimise their health and prevent complications through adequate nutritional intake^[38, 39]. Consistent with previous studies among vegan women, all participants breastfed their newborns or intended to do so, and considered breast milk the healthiest choice for their children^[30, 40, 41]. Participants were also very steadfast in their choice for a vegan diet, not considering changing it because of pregnancy or lactation. While this consistency reflects strong intrinsic motivation and moral commitment, it also means that women are unlikely to adapt their diet even in the face of potential health risks. Given that vegan diets are associated with lower intakes in protein, vitamins B12 and D, and various minerals critical for maternal and fetal health, it becomes essential that professional support is available to help ensure nutritional adequacy^[10, 11]. The findings therefore underscore the need for maternity care providers to actively support women on a vegan diet, not by discouraging their choices, but by offering tailored advice and screening to safeguard maternal and child health.

As described above, a key finding was the participants' perseverance in maintaining a vegan diet during pregnancy. Most had adopted a vegan lifestyle years before becoming pregnant, primarily for ethical reasons. This value-based motivation appears to be deeply rooted in personal identity^[22, 23]. The

women's motivation was largely autonomous and intrinsically driven, which may explain why they continued their diet despite the scepticism of others, in line with the SDT^[33]. Previous research has also shown that family members, friends, and healthcare professionals often monitor maternal choices closely and may question the dietary adequacy of a vegan diet during pregnancy^[42]. Such vigilance can involve warning against 'unsafe' foods or urging extra supplements, reflecting a wider cultural portrayal of veganism as restrictive or even irresponsible in motherhood^[43, 44]. External concerns hardly ever weakened participants' commitment in the current study; many women relied on informal support networks, such as partners, vegan peers, and online communities, to obtain practical tips and emotional reassurance. Participants often used questions from others as a teaching moment, pointing to their uneventful pregnancies as proof of dietary adequacy. Such resilience to social influence has previously been found to be easier to maintain when the diet is strongly embedded in one's moral identity, making consistency more rewarding than conforming to social norms^[45]. However, in view of the documented risk of micronutrient deficiencies in poorly planned vegan pregnancies, the absence of concern among current participants underscores the responsibility of maternity-care providers to screen for nutrient adequacy and the need for nutrient intake data from more socioeconomically diverse populations^[46]. However, while current participants consulted a wide range of sources, most avoided seeking dietary advice from obstetric care providers, often due to the expectation that those professionals lacked sufficient knowledge about vegan diets. This perception is supported by earlier research indicating that healthcare providers often lack education in plant-based nutrition during pregnancy^[30, 34, 46].

Current participants generally perceived themselves as well-informed, reflecting their strong health literacy (*i.e.*, the ability to access, understand, and apply health information) in relation to the vegan diet, a recognised social determinant of health^[47, 48]. Nonetheless, participants expressed concern that less-informed women might adopt a vegan diet without proper guidance. Although practical dietary guidelines do exist^[46, 49, 50], they are based on very limited available scientific evidence and have yet to be widely implemented in national protocols and/or professional training^[10]. As a result, women often find themselves relying on informal sources or navigating complex nutritional decisions on their own.

This study contributes to the limited literature on vegan diets during pregnancy by providing detailed insights into the experiences and decision-making processes of women who maintained a vegan diet during this life phase. It shows that while individual motivation and knowledge are key, these factors interact with broader social, cultural, and institutional conditions that shape dietary behaviour. This study has several methodological strengths. First, it included a relatively large sample for a qualitative study ($n = 29$), which enabled thematic saturation and a broad range of perspectives. Second, the use of established behavioural theories (TPB and SDT) provided a strong conceptual framework for data collection and analysis. By combining theory-driven (deductive) and data-driven (inductive) analysis, the study was able to both explore expected patterns based on existing models and identify new, unanticipated themes emerging from the participants' experiences. Finally, the study demonstrated sufficient inter-coder reliability (Cohen's $K = 0.80$), strengthening the credibility of the analytical process. Despite its contributions, this study has some limitations. The sample consisted exclusively of women

who maintained a vegan diet during pregnancy, potentially omitting the perspectives of those who discontinued their diet due to, e.g., social, financial, practical, or health-related challenges. Additionally, all participants were highly educated, which may limit the generalizability of the findings.

Future research should aim for more socio-economically diverse samples and also include women who considered but discontinued a vegan diet during pregnancy. A longitudinal design would enable the study of how dietary motivation, nutritional practices, and health outcomes evolve, from preconception through pregnancy and lactation to early childhood. In addition to behavioural and social factors, future studies should integrate biomedical outcomes to assess the health impact of vegan diets more comprehensively. This includes tracking maternal and infant health indicators, as well as examining the gut microbiome of both mother and child. Diet is a major determinant of microbiome composition, and the maternal microbiome can influence pregnancy outcomes and early immune development. This line of research could offer crucial insight into how plant-based diets affect physiological health during the perinatal period.

CONCLUSIONS

This study offers new insight into how women adhering to a vegan diet manage pregnancy and lactation. It highlights how deeply internalised moral identity and intrinsic motivation can deflect external pressure and dietary stigma. Participants primarily relied on informal support networks rather than professional care, underscoring the gaps in current healthcare provision. Their strong knowledge of the topic and confidence enabled them to transform societal scepticism into opportunities for advocacy.

These findings reflect the experiences of highly educated women who maintained a vegan diet during pregnancy and lactation. Underlying reasons were linked to health literacy, intrinsic motivation, and supportive social networks – factors that may not be equally present in all populations. These insights underscore the importance of developing healthcare environments that can accommodate healthy choices within a vegan diet across a broader spectrum of backgrounds and needs.

Abbreviations

COREQ checklist
consolidated criteria for reporting qualitative research
TPB
Theory of Planned Behaviour
SDT
Self-Determination Theory

Declarations

Ethical approval and consent to participate:

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving research study participants were approved by the Research Ethics Committee of the Faculty of Health, Medicine and Life Sciences of Maastricht University, registered under number FHML/HEP_202.253. Verbal informed consent was obtained from all patients. Verbal consent was witnessed and formally recorded.

Consent for publication:

Not applicable

Competing Interests

Jessica Gubbels is a Guest Editor for the Collection to which this manuscript is submitted. The other authors declare that they have no competing interests.

Funding:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author Contribution

DM: Conceptualization, Formal analysis, Writing – original draft; RE: Writing – original draft, AA: Data curation, Formal analysis, Writing- review & editing; JP: Data curation, Writing – review & editing; SE: Writing – review & editing; HS: Writing – review & editing; DJ: Writing – review & editing; JG: Conceptualization, Supervision, Writing – review & editing.

Acknowledgement

We want to thank all the women who participated in this study.

Data Availability

: The datasets generated and analysed during the current study are available from the corresponding author on reasonable request

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