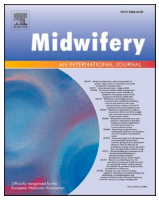
Midwifery 140 (2025) 104206

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/locate/midw



Midwives' perceptions and experiences of recommending and delivering vaccinations to pregnant women following the Covid-19 pandemic: a qualitative study

Dr Catherine Grimley [a,*], Professor Helen Atherton [a], Professor Debra Bick [c], Louise Clarke [b], Dr Sarah Hillman [a], Dr Jo Parsons [a]

[a] Division of Health Sciences, Warwick Medical School, University of Warwick
[b] University Hospitals Coventry and Warwickshire
[c] Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick

ARTICLE INFO

Keywords:
Pregnancy
Vaccination
Covid-19
Midwife
Antenatal
Qualitative research

ABSTRACT

Background: Pregnant women and their unborn babies are at an increased risk of hospitalisation, morbidity, and mortality from illness. However, uptake of influenza, pertussis and Covid-19 vaccinations offered during pregnancy is below the desired rate. This research aims to explore UK midwives' experiences of approaching and discussing vaccinations with pregnant women, and their perceived role in pregnant women's vaccination decisions.

Methods: Midwives in the West Midlands, UK were recruited via participating hospitals and midwife specific social media groups. Interviews were conducted remotely from April to July 2023 and analysed with a deductive codebook coding strategy using thematic analysis.

Findings: Semi-structured interviews were conducted with 16 midwives identifying the following key themes: Recommendations to have vaccinations reported on the contents of recommendations and how they are communicated; Messages and guidance included the importance of up-to-date informational needs for midwives to administer vaccinations and the barriers caused by uncertainty and conflicting messages about the Covid-19 vaccine during pregnancy; Delivery of vaccinations included the convenience of offering vaccinations during standard antenatal appointments; and Midwives' barriers explored the pandemic specific and other barriers midwives face in the administering of vaccinations.

Discussion: These findings contribute to the understanding of how midwives discuss the topic of vaccinations with pregnant women. This research highlights the importance for midwives to receive clear and consistent information. A strong emphasis on why vaccines are important when recommending to pregnant women in addition to standard information on the availability and timing may have a bearing in helping women to make informed decisions about accepting vaccinations.

Introduction

Statement of significance

Problem or issue	Pregnant women and their unborn babies are at an increased risk of hospitalisation, morbidity, and mortality from infectious diseases.
What is already known	Uptake of influenza, pertussis and Covid-19 vaccinations offered during pregnancy is below the desired rate. Evidence suggests that recommendations to have vaccines made by health care professionals and how the vaccine is delivered are very influential on uptake of vaccines.
What this paper adds	This paper highlights the importance for midwives to receive clear and consistent information from national trusted sources so they can make effective recommendations to pregnant women. Additionally, both content and strength of the recommendations from midwives are key when having vaccination discussions with pregnant women.

* Corresponding author: Division of Health Sciences, Warwick Medical School, University of Warwick, Gibbet Hill, Coventry, CV4 7AL
E-mail address: catherine.grimley@warwick.ac.uk (D.C. Grimley).

https://doi.org/10.1016/j.midw.2024.104206
Received 21 December 2023; Received in revised form 25 September 2024; Accepted 1 October 2024
Available online 2 October 2024

During pregnancy women are at an increased risk of becoming seriously ill from disease (Say et al., 2014). Catching influenza (flu) while pregnant is significantly more likely to result in serious complications and death than in non-pregnant women (Campbell et al., 2015) and is associated with a seven times higher risk of hospitalisation (Mertz et al., 2019). Flu can also adversely affect the unborn and newborn baby and has been associated with low birth weight, premature birth and death (Afuwape et al., 2022, Health Security Agency, 2022). Pregnant women are at a higher risk of severe illness from Covid-19 with a higher likelihood of experiencing premature birth and stillbirth (Allotey et al., 2020). Risk factors become more apparent as the pregnancy progresses with much higher rates of hospitalisation in later trimesters. Following birth, pertussis (whooping cough) is a highly infectious disease affecting babies and young children causing severe coughing and on occasion apnoea. Symptoms can persist for a couple of months and can be severe including death (Afuwape et al., 2022) .

Due to the increased risk, in the UK pregnant women are offered flu, Covid-19, and whooping cough vaccinations (NHS 2023). Whooping cough is given after 16 weeks gestation, flu and Covid boosters can be given at any time during the pregnancy (UK Health Security Agency 2021). Evidence demonstrates effectiveness and safety for Covid-19, whooping cough and flu vaccines during pregnancy and provides protection from serious illness, risk of hospitalisation and death (Lynch et al., 2012, Regan et al., 2015, Tamma et al., 2009, Villar et al., 2023).

Despite proven benefits, uptake of these vaccines among women in the UK is low. In England the number of women vaccinated against whooping cough is in decline with 58.6% of pregnant women vaccinated against whooping cough in the 2023-24 period compared with 70.5% in 2019 (UK Health Security Agency 2023, Uk Health Security Agency 2024). Rates of flu vaccination are lower with 32% uptake of vaccination between 2023 and 2024 (UK Health Security Agency 2024). Covid-19 vaccination rates are lower still. In the UK in October 2021, of women giving birth during this month 29.4% had received two vaccinations, although this figure is steadily rising with 50.6% women giving birth in January 2022 having received two Covid-19 vaccinations (Gov. UK 2022, Gov.UK 2022). Covid-19 uptake statistics for 2023-24 are not yet available. Vaccination uptake is also influenced by ethnicity and deprivation where minority ethnic groups and those in more deprived areas are less likely to have been vaccinated (Woodcock et al., 2023, Schmidtke et al., 2022, Walker et al., 2021). There is also evidence that recommendations to have vaccines made by health care professionals and how the vaccine is delivered are very influential on uptake of vaccines (Bisset & Paterson, 2018, Brewer et al., 2017). The role of healthcare professionals in vaccination discussions is complicated by the lack of consistent vaccination records (NICE 2022). System-level barriers are likely to make it harder to record and track who has taken recommendations on board.

Antenatal care in the UK involves frequent meetings and contact with community and hospital midwives beginning with a booking in appointment in early pregnancy in which midwives discuss all aspects of pregnancy such as healthy eating, medical history and risk factors and include discussions about vaccinations (NICE 2021). Midwives' own beliefs have shown to be important in how they recommend vaccinations to women in pregnancy. Healthcare professionals (HCP) are more likely to recommend vaccinations if they had received or would choose to have vaccinations in pregnancy (Vishram et al., 2018). In an Italian study 10% of HCPs believed that the risks of vaccines outweighed the benefits and a quarter believed that the flu and Covid-19 vaccinations were not necessary in pregnancy (Licata et al., 2023).

The relationship between HCP and pregnant woman in terms of rapport and trust and the way the recommendations made by the HCP have shown to be important factors in vaccination discussions (Holford et al., 2024) and in the decision of whether to have the vaccine or not (Marín-Cos et al., 2022). Media was also recognised as being an avenue to provide pregnant women with trusted and reliable messages. Recent qualitative evidence has demonstrated the importance of effective communication from midwives about vaccinations, particularly in overcoming misconceptions, and understanding the root of attitudes of individuals who are not in favour of vaccinating, compared to provision of factual information alone (Kaufman et al., 2019).

There is a need therefore to further explore current midwife recommendation practices. This research aims to explore UK midwives' experiences of approaching and discussing vaccinations with pregnant women in considering how to improve acceptance and uptake of vaccinations.

Methods

This research used semi-structured interviews to explore midwives' experiences of discussing vaccinations with pregnant women. Findings from interviews with pregnant women are reported separately (Parsons et al., 2024). The article is reported using the Standards for Reporting Qualitative Research framework (O'Brien et al., 2014).

Recruitment and Sampling

Midwives were recruited using purposive sampling from community and antenatal clinics at two National Health Service (NHS) hospitals delivering free healthcare in the West Midlands region of England, both of which cover areas with high deprivation levels and ethnic minority distribution. Information regarding the study was shared with the midwife teams at these hospitals via team meetings, study posters, and weekly handover emails. Additionally, the research team shared advertising information with the Royal College of Midwives and private midwife Facebook groups. Midwives who were interested contacted the team who then shared the study documentation with them and checked eligibility before the interview was scheduled. Participants were eligible if they were working/had worked as a midwife in the UK and were over 18 years of age. Ethical approval was given by Yorkshire & The Humber - Sheffield Research Ethics Committee (REC 22/YH/0283).

Data collection

Semi-structured interview guides were developed from existing literature (Parsons, 2020) which focussed primarily on pregnant women, but was adapted to determine midwives perspectives on the points raised and from discussion with healthcare professionals (midwives, public health professionals and GPs), Patient and Public Involvement (PPI) representatives (including PPI co-applicant and a study specific PPI group), and the prior experience and knowledge of experts in the research team. Discussions included the use of appropriate language to use in the guides, length of the schedule, and ensuring all relevant questions were included. The schedules were frequently reviewed and adapted iteratively as more interviews were completed. Interviews with midwives were conducted between April and July 2023 by two experienced qualitative researchers over the telephone or via video conferencing. The interview guide can be viewed in the supplementary data area. The interviews were audio recorded and transcribed verbatim by a university approved company. Transcripts were subsequently checked for accuracy before being uploaded to NVivo 1.6.1 (https://help-nv.qsrinternational.com/20/win/Content/welcome.htm) in preparation for analysis. Verbal consent was obtained at the beginning of each interview in a separate recording from the interview to preserve confidentiality. We initially aimed to recruit and interview 20 midwives, with recruitment numbers similar to another successful health study (Berendes et al., 2023). We wanted to recruit midwives with a range of experience and roles within the NHS, e.g. in the community, hospitals, and antenatal clinics etc. We felt we had achieved this after interviewing 16 and additionally no new themes were identified.

Data analysis

Data were analysed using a codebook approach to thematic analysis (Braun & Clarke, 2006, Byrne, 2022) following the six steps of 1) data familiarisation 2) generating initial codes, 3) collating codes into potential themes, 4) review and refinement of themes, 5) theme definition and naming, and finally 6) producing the finished document. A codebook methodology values both the interpretative position of data coding and analysis but also uses a structured codebook, so is in essence, a flexible analysis strategy. Transcript coding and analysis was performed by two researchers. Frequent coding reviews took place between both researchers, the PPI group, and the wider research team.

About the research team

The researchers are independent and not connected with any organisations caring for pregnant women. Both researchers have a research background in health psychology, experience of conducting qualitative research, and the research team has carried out prior research in vaccinations in pregnancy. The wider research team includes academic researchers and health care professionals with expertise in women's health and were involved in discussing and interpreting the main findings. PPI members were recruited prior to the study start and were involved in all aspects of the study. A reflexive and collaborative process during the analysis phase was undertaken in order to minimise the potential for research bias.

Findings

Participant Characteristics

16 midwives were interviewed, 14 over the telephone and 2 via video conferencing (Table 1).

Themes

Four main themes were identified from the analysis: **1) Recommendations to have vaccinations 2) Messages and guidance; 3) Delivery of vaccinations**; and **4) Midwives' barriers**. A summary of themes and sub-themes is presented in Table 2.

Recommendations to have vaccinations

The recommendations theme explored how recommendations to have vaccinations are communicated to patients, the content and strength of those recommendations, and the timing of when the recommendation is made.

Table 1
Participant Characteristics.

N=16	Frequency
Gender	
Male	0
Female	16
Age	
18-30	5
31-40	2
41-50	6
51-60	0
61-70	3
Number of years qualified	
0-10	10
11-20	4
21+	2
Ethnicity	
White British	15
British Pakistan	1
Role base	
Hospital	8
Community	6
Mix	2

Table 2
Themes and Sub-themes.

Theme	Sub-themes
Recommendations to have vaccinations	How recommendations are communicated
	Personal views of vaccination held by midwives
	Content and strength of the recommendation
	Timing of the recommendation
Messages and guidance	
Delivery of vaccinations	Convenience of offering there and then
	Practical difficulties of offering there and then
Midwives' barriers	Covid specific barriers
	Other barriers

How recommendations are communicated

Midwives spoke about the methods they use for recommending vaccinations such as relaying the positives rather than a more passive offer to encourage pregnant women to consider vaccinations.

> *"I also sometimes approach it in the, 'Do you know we offer vaccinations here? Instead of you having to go to your GP,' et cetera, to make it sound like it's, you know, advantageous but the fact that you can get it while you're here sort of thing" M2*

One midwife spoke about the impact of building trust and a relationship in women's' vaccine decisions. Being able to create that relationship bond added weight to their recommendations giving a sense of confidence to the women that they could rely on and trust, not only in the information given to them, but also in the HCP delivering the vaccination.

> *"I really encourage women to have the vaccines. You know, I think if they've built a good relationship with you, they'll have it, especially if you say, 'Look, I'll do it. You know, Come and see me, and I'll do it for you'. " M11*

Midwives wanted to encourage informed decisions, wanted to keep the conversation ongoing, using every opportunity and different avenues to have that discussion. They felt that treating the topic sensitively with a non-judgemental attitude meant they could have discussions even if the woman was against having the vaccine.

> *"Some people will just say, "Absolutely not," straight away. But we'll, I'll still explain to them that I'm going to send them the digital leaflets and also, that we will be asking them regularly throughout their pregnancy, even though they've said no now, we will just, you know, keep offering it them, sort of thing you know, sensitively" M12*

Midwives felt that women should not be coerced and should be offered ample time to consider and process the information and be able to make a fully informed decision.

> *"I know for some women it can feel, if they haven't had that information, they could feel a little bit surprised by it and feel put on the spot. But I think if it's done properly, they shouldn't feel like that" M8*

Midwives reported that Covid-19 has in some ways made it more difficult for women to trust vaccines due to media reporting and amount of circulating misinformation and they now ask more questions about flu and whooping cough in comparison to before the pandemic. Midwives felt this had both positive and negative ramifications, positive in that it has opened up the conversation but in other ways less positive as it can be more difficult to convince women of the safety of the vaccines.

"I do feel like women are just generally more averse to vaccinations in general. And they see a lot more of the risks, whereas before, I felt women were a lot more accepting to just take the whooping cough vaccine. Whereas I think, now, it's starting to trigger more questions." M15

Midwives described the way in which they made the recommendation in an encouraging rather than passive style. One midwife spoke of how anecdotal stories could be useful to help persuade women.

"And she said, "I'm so pleased you gave me my flu vaccine. All my family went down with flu over Christmas. My mother was hospitalised, and I never got it." So, that was a, a nice story, and one that I've used ... with people who are reluctant to have it" M4

Personal views of vaccination held by midwives impacts recommendations

Some midwives expressed concerns about how the personal views of vaccinations held by other midwives they worked with could impact on how they recommend vaccinations to pregnant women. One midwife spoke about the effects of apathy or negative vaccine beliefs from other midwives where perhaps there were lost opportunities to vaccinate.

"Whereas I've actually heard women say, "Oh, can I have my flu, flu vaccine, as well?" And I've heard the midwife go, "Oh, we haven't got any." And I know there's 40 in the fridge. So, I'll say, "Oh, I'll do that" M11

Midwives felt that they were entitled to their own views but that they needed to present the common professional viewpoint which is independent of personal beliefs. Concern was expressed that a midwife's lack of confidence in the vaccine would be evident to pregnant women.

"The, the only worry that I have had in the past, not as much now, is when there was a little bit less guidance, I'm worried that sometimes, I think, midwives' personal views on vaccines might come across in the information they give. I've had the worry that, you know, "Oh, well, I'm supposed to recommend this vaccine but I wouldn't have it if I was pregnant," sort of vibe which I feel isn't necessary" M8

Content and strength of recommendation

Midwives felt that they needed to be explicit about the higher risk of serious illness to pregnant women even if they were unsure of whether it was right or wrong to upset and frighten them into having the vaccination. They felt it was important to be clear about how unwell you can get if not vaccinated, being able to explain in detail what the illness is and what the effects of catching the illness can be.

"I think it's not explained enough, that, what flu is. You know, flu can have our ladies in ICU, it's, it's, it can be really, really dangerous. So again, I think, maybe, maybe it's because I'm, I sound like I frighten all these ladies, because when I think of some of the things, the way I discuss it, I think because you are explaining the importance to it ..." M5

Midwives considered that an effective recommendation should include information about the positives of having the vaccine, why it is offered and promoted, often with the emphasis on benefits for the baby, depending on the vaccine being recommended.

"And I've had a lot of people that won't consider COVID or flu that will consider a whooping cough vaccine 'cause obviously, because of the protection it gives baby" M8

Midwives provided vivid descriptions during interviews of having seen pregnant women very ill and felt this made them more resolute to making effective and strong recommendations and more passionate about recommending the vaccines, and therefore relaying these vivid descriptions to the women themselves.

"And I also think it's really powerful, you know when there's, like, quotes from women. You know, "I woke up in ITU [ICU]. I didn't know what day it was. .... My baby was four months old before I met him." You know, I think we need to ... we owe it to these women to give them, like, the hard stories. You know, the stories that are hard to digest" M11

Some midwives also recognised the need to make the recommendation strong enough to compete with external influences, how as a health care professional you only get one chance to make that impression in comparison to the bombardment of information and sometimes misinformation from family, friends, and social media.

"Yeah, and I also like to talk to them first. I don't wanna just give them a leaflet and not discuss it, 'cause I think, first of all it makes it seem a bit less important." M16

Midwives described other resources that were available to pregnant women outside of the vaccination discussions and these are useful to supplement and strengthen the verbal recommendations made by midwives. This included written information such as leaflets, posters, information on apps (BadgerNet, My pregnancy notes), signposting to websites such as the NHS, Royal College of Obstetricians and Gynaecologists, social media, and YouTube videos. Verbal information was considered a priority though, for extra reassurance or to add weight to written literature.

"They want to hear it from you, not necessarily on a, a website…reaffirming that it's safe" M4

Timing of the recommendation

The timing of information given was felt important. The first opportunity for vaccine discussion is at the booking appointment alongside other information. Midwives spoke about giving preliminary information at six weeks (first contact), having a main discussion at 12 or 16 weeks where they can have the flu there and then if it is in season.

"so, we, we mainly have our discussions after the, the women have had their first dating scan, so about 12 weeks. They've *already been, sort of, counselled, well, they should have been counselled about this when they first saw the midwife, but, anywhere from, sort of, six weeks. So, we give a, I suppose a, a brief sort of overview about what's on offer... and where they can have the vaccines done" M12*

At booking appointments vaccine information can often be buried in the sheer amount of other advice given, such as healthy eating and parent education. Often women are reluctant to have vaccinations before 12 weeks and some not until after 30 weeks due to fear the vaccine will cause harm to the growing foetus.

"I feel, at that booking appointment there's a lot of information that they've already been given. So, often I don't find that you get much reaction to that specific information, apart from, I'd say, the COVID vaccines because that's a specific part now of the medical history… so, I feel like, and the impression that I get from women is that, in that first, sort of, especially 12 weeks, that they don't wanna have vaccination during that time" M15

Messages and guidance

Midwives spoke of the local and national messages and guidance they receive, for example from the NHS and World Health Organisation, and the process of relaying this to pregnant women. With the delivery of the Covid-19 vaccine, some midwives found that the national guidance and messages from the government were often fraught with confusion, and at times contained conflicting messages. Initially, the advice received recommended that pregnant women were not to receive the Covid-19 vaccination. But then with what was described as a 'Government U-turn' by several midwives, pregnant women were introduced as a group that should vaccinate. This led to difficulties in keeping up with the latest information. With the information changing it was felt to be

less trustworthy and reliable.

"And then I think they got a little bit of mixed signals from the government. You know, "Don't have the vaccine," and then, "No, it's safe to have the vaccine." So I think that's where a little bit of trust got broken down with the government" M3

In addition to this, with the restrictions now mostly lifted, midwives spoke of Covid-19 and vaccine information being much less visible both in guidance and on advice to give. With Covid-19 not being at the forefront there was a feeling of not knowing if the information they had was up-to-date and was what they should be telling pregnant women. Often midwives found that the source of the information they were giving out came from the news and media rather than from trusted medical organisations. With the boosters being seasonal and offered to different groups based on need and priority, staying up to date with changing advice and guidance was thought to be challenging.

"But I would say at the moment, because the, whichever the booster campaign we're on now, because that's the, what, over 70s, but that isn't including, pregnant women aren't now in that at-risk group. And to be honest, the, the information that we receive is often when it's been on the news. We don't get anything before that, so it's hard for us to then give proper information. We're not really receiving information to, to provide to, to women" M9

Because of this one midwife felt there was a need to receive clear and consistent national information.

"I think big organisations like Department of Health, and RCOG, and NICE, Royal College of Midwives, even, like, these big well-known organisations to have readily available information that's written in a way that's not, like, medical jargon and really complicated language." M16

Similarly, midwives also felt that as well as national information, information perceived to be trustworthy could be tailored to the individual and local messages from trustworthy community organisations could also be beneficial.

"If you had a problem or an issue you'd go to your GP, your community leaders, the Imams at the mosque. So, yeah, and they've all got those reliable sources, trusted sources. "M7

One midwife was concerned that to be able to deliver effective communications, more training about the risks and benefits of vaccinations should be given to midwives to be able to recommend the vaccinations to women more effectively. Similarly, it was felt that more statistical information regarding the effectiveness of the vaccine in question would also help to increase pregnant women's trust in messages received.

"I'm doing a public health masters at the moment, so I now understand the risks of whooping cough vaccination and different vaccinations, whereas when I trained to be a midwife, those things were not taught to us. We were just taught about the information to provide to women. And it was very much one sided, that, "This is the benefit and this is what women should do." Whereas now, because of the other study I've done, I can see the other side of it. But, but majority of midwives probably wouldn't. So, there's probably that lack in the information midwives are given and the lack in the resources that we hand out as well. "M15

Delivery of vaccinations

Convenience of offering there and then

Some midwives spoke of the benefits of flu and Covid-19 vaccinations being offered to women in the West Midlands as part of their antenatal appointments, with only whooping cough needing to be administered via the GP practice. Midwives considered vaccination clinics within some hospitals to be particularly helpful for pregnant women who have an intention to get the vaccination in question but have not acted on this or for those with competing demands such as childcare responsibilities.

"For some people, they've already made the decision to have it, but it's, perhaps, not found the time to have it. You know, for that group, it sounds like a really, a really good opportunity" M2

When recommending the vaccine, midwives felt it was easier to do if they could offer it there and then, rather than talking about its importance but having to signpost elsewhere for the vaccine to be administered.

"We did have a COVID vaccination hub here at the height of it, but I think that's gone now. So, I think the women that want the COVID when it becomes the season again and if it is they are included in the at-risk group. They'll have to go elsewhere and that, that is all, I hate that, because I feel like they walk out the door and they're not going to go and do it" M13

However, whilst potentially beneficial in making it simpler for women to have vaccinations, this increased the workload and pressure on midwives.

"With the whooping cough vaccine, we used to offer it there and then, but it didn't, it was very difficult with workloads so we book in, now, sort of separate clinics. Which, personally, I, I think it's better to give there and then, even though it's harder for the workload. But there's been quite a few contesting, sort of, views on that from the members of staff. 'Cause it is hard, there and then, it does really ramp up your workload for the day" M12

Some midwives spoke of a designated vaccination team who would ease this pressure.

"But certainly, in our antenatal clinic we have a designated, they have employed somebody just to capture women coming through the clinic and to discuss vaccination with them" M10

Being able to dedicate more resources to vaccinations when needed and responding dynamically to changes in demand allowed strategies such as opportunistic vaccination to be possible.

"We have peer vaccinators who are trained up every year. So, when the season starts for flu, for example, anyone that comes in, we have these pop-up vaccination clinics running alongside scans for antenatal clinics so that women who then can, that want it can then have it there and then" M13

Practical difficulties of offering there and then

The necessity to prefill and check vaccination supplies before they could be administered was reported as further adding to the midwives' workloads. This approach also led to some confusion for both women and midwives, in terms of what could be given at the appointment and what was not available at the hospital so had to be booked elsewhere.

"Yeah, and also, but it's saying, you know, 'You can have your flu vaccine now, here, but we can't give you a COVID vaccine,' you think, 'Oh, it's a bit conflicted isn't it?'" M12

Another issue midwives faced in delivering vaccinations was the difficulty in monitoring which women had already received a vaccine if they were not the ones administering the vaccinations, and also whether the recommendations made had influenced women's decisions.

"The trouble is it's hard, because, because we're not physically giving it in the hospital then it's hard to know between when they're whether they're having it, because obviously we're not giving it, we're not recording it" M1

Some midwives reported that pregnant women are becoming more accepting of receiving the Covid-19 vaccine and there is less hesitancy towards it because of increasing perceptions and evidence of safety and number of pregnant women having had it. This can make it difficult though when pregnant women ask to be vaccinated but there is no

booster available, or it is not being offered currently to pregnant women.

> *"Now, it's very much more positive, and women are asking about it. But at the present moment in time, there is no booster available for them" M4*

Midwives' barriers

As well as barriers concerned with delivery of vaccinations, midwives spoke of the barriers they faced when recommending vaccines, and in the practical delivery and performing their role. These we broke down as those specific to the Covid-19 pandemic and other barriers.

Covid specific barriers

One of the issues that midwives discussed, linking closely with the 'messages and guidance' theme, was the reduced visibility of Covid-19 and because of this, a lower perceived threat of the illness. One midwife spoke of how decreased Covid-19 infection control measures such as wearing of facemasks and removal of screens made it more difficult to recommend vaccination. This was additionally difficult as there are now fewer vaccine centres and therefore less availability.

> *"To be honest, I don't really feel like we mention it anymore. Particularly because it's not, kind of, that massive, nationwide rollout you know, that it was. …. I also feel like people have very much thought, 'Well, COVID doesn't exist anymore'. At this hospital, for example, we no longer wear masks, and we no longer have the screens up, and because it's not as visual anymore, people have really thought that it's probably gone away." M2*

Midwives felt that apathy from women made it difficult, even with higher-risk women, to broach the conversation about vaccinations. Conversely, sometimes just being able to speak to the women was an issue as due to fear of Covid-19 infection, some women chose not to attend for their appointments, making that face-to-face contact impossible.

> *"So normally we offer them to come in twice a week. Some wouldn't come in even though, you know, their babies, on scan, were at risk, they were measuring small, because obviously they didn't wanna get COVID" M3*

One midwife also described that some services were still not running due to Covid which mean lost opportunities for vaccine discussions.

Other barriers

Language was reported as a barrier to being able to discuss vaccines with some groups of pregnant women, however there were sources of support acknowledged, such as one midwife describing that NHS England has resources for pregnant women in 30 languages in addition to English. However this still relies on pregnant women having a good level of literacy in their own language.

> *"Yeah, so, it's really important for the ladies as well to speak their own mother tongue but be able to read it as well, 'cause some of the words are quite difficult. They're quite hard to read and so, it's really important for the literature to be, maybe, maybe picture as well, 'cause sometimes ladies understand, the families will be able to understand pictures."M7*

Unfamiliarity and lack of visibility of illness was a barrier to convincing women of the importance of vaccines. Midwives spoke of scenarios where certain illnesses such as polio and to a lesser extent whooping cough have not been prevalent in the population for a while, with the feeling that people were more reluctant to receive vaccinations if they did not know much about the illness. Similarly, because Covid-19, even though it has received high profile attention, is still new, women are more reluctant to accept new over the old.

> *"I think especially because if it's a new vaccine, I think obviously with flu and pertussis, you know, there's, there's been such a long-standing program now, I think everybody really accepts them and knows obviously the, the risks are, you know, really, really minimal. I think that perhaps there's a little bit of uncertainty regarding, you know, the risk for COVID, because it's still quite new" M1*

Discussion

These findings contribute to understanding how midwives working in the UK discuss the topic of vaccinations with pregnant women. The key findings were the location and convenience of being able to offer the vaccination at existing routine antenatal appointments, in contrast with the women having to book separate appointments. This suggest a tension between making it easier for the women to be vaccinated versus the existing barriers in offering this. How and when and the strength of the recommendation made, including the midwives' own beliefs about vaccinations, were thought by midwives to influence women's' decisions. To be able to inform and deliver the vaccinations, midwives need up to date national and trusted resources to confidently make these recommendations.

Findings from this study corroborate with that of existing literature where midwives own beliefs have an impact on the way they recommend vaccinations (Vishram et al., 2018), while also recognising the importance of adhering to the midwives professionals standards of practice code (Nursing & Midwifery Council 2018). Having trust and rapport and the strength of the information given were important considerations in vaccination decisions (Marín-Cos et al., 2022) as well as messages from mass media. A study conducted with midwives in Australia, which have similar levels of vaccination uptake to the UK, found very similar themes with the current study, for example, looking at the way in which midwives make recommendations and how they frame these using active or passive voice (Kaufman et al., 2019).

Some themes presented in this study are also supported by the findings from recent research exploring pregnant women's views (Parsons et al., 2024). Contradicting messages from the government and mass media were discussed by both pregnant women and midwives, and in both populations caused uncertainty and distrust.

Another similar theme was the convenience of being offered and receiving the vaccination at the hospital while attending routine antenatal appointments which encouraged uptake. Midwives were in agreement with this and wanted to promote to women the straightforwardness of being able to receive the vaccination whilst they were already at the hospital, similar to findings of Kaufman et al. (Kaufman et al., 2019) but also acknowledged that while it was easier for the pregnant women, the practicalities of vaccine delivery during routine appointments added to their own workload and in some cases, made their role more difficult.

Midwives and pregnant women also had similar views regarding the current visibility of Covid-19. How the fact it is observed and spoken about less in society with less availability of boosters may have an influence on uptake making it more difficult for pregnant women to get and more difficult for midwives to recommend.

The midwives interviewed were all White British bar one which means that the study lacks views and experiences from midwives of other ethnicities and so may only be generalisable to that population. However, these midwives mainly worked in the two hospitals where there are high deprivation levels and ethnic minority distribution, so their experiences of recommending vaccinations to women will have come from this population. Additionally, the interviews were conducted when the Covid-19 pandemic was past its peak, with COVID-compliant restrictions no longer mandatory in hospitals and so not as visible. Covid-19 is a constantly changing situation with infection surges and troughs. At the time of the interviews the levels of Covid-19 were low and there was little media visibility. It is a distinct possibility that responses regarding vaccinations and descriptions of perceived risk from pregnant women reported by the midwives may have differed if interviews had taken place during or soon after the height of the

pandemic. Finally, during the interviews, midwives often talked about the practices and what they had observed of other midwives and healthcare staff. It must therefore be noted that these are subjective perceptions and could be interpreted very differently by somebody else.

Implications

Findings highlight the importance for midwives of receiving clear and consistent information so they can feel confident in relaying this information while recommending and delivering vaccines to pregnant women. Both content and strength of the recommendations from midwives are important when recommending vaccinations to pregnant women in addition to standard information on the availability, and could help women to make informed decisions about accepting vaccines. The findings of this study will inform the development of an intervention to increase vaccination uptake amongst pregnant women and have the potential to inform educational materials for midwives.

Funding

This study/project is funded by the National Institute for Health Research (NIHR) [Research for Patient Benefit (NIHR203598)]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

CRediT authorship contribution statement

Dr Catherine Grimley: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Professor Helen Atherton:** Writing – review & editing, Funding acquisition, Conceptualization. **Professor Debra Bick:** Writing – review & editing, Conceptualization. **Louise Clarke:** Writing – review & editing, Conceptualization. **Dr Sarah Hillman:** Writing – review & editing, Conceptualization. **Dr Jo Parsons:** Writing – review & editing, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Debra Bick is Editor in Chief of Midwifery, but all editorial decisions from submission to final decision have been undertaken by one of 'Midwifery's' associate editors. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors would like to thank the participating midwives that took part in the interviews, the midwives that helped with identification and recruitment, and to the study PPI contributors for providing valuable input throughout the research.

This study/project is funded by the National Institute for Health Research (NIHR) [Research for Patient Benefit (NIHR203598)]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2024.104206.

References

Afuwape, I, Parsons, J, Bick, D, Dale, J, Hillman, SC., 2022. Vaccines and pregnancy. InnovAiT 15 (1), 14–18.
Allotey, J, Stallings, E, Bonet, M, et al., 2020. Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis. Bmj 370, m3320.
Berendes, S, Mounier-Jack, S, Ojo-Aromokudu, O, et al., 2023. Figuring stuff out myself" – a qualitative study on maternal vaccination in socially and ethnically diverse areas in England. BMC Public Health 23 (1), 1408.
Bisset, KA, Paterson, P., 2018. Strategies for increasing uptake of vaccination in pregnancy in high-income countries: A systematic review. Vaccine 36 (20), 2751–2759.
Braun, V, Clarke, V., 2006. Using thematic analysis in psychology. Qualitative Research in Psychology 3 (2), 77–101.
Brewer, NT, Chapman, GB, Rothman, AJ, Leask, J, Kempe, A., 2017. Increasing Vaccination: Putting Psychological Science Into Action. Psychological Science in the Public Interest 18 (3), 149–207.
Byrne, D., 2022. A worked example of Braun and Clarke's approach to reflexive thematic analysis. Quality & Quantity 56 (3), 1391–1412.
Campbell, H, Van Hoek, AJ, Bedford, H, et al., 2015. Attitudes to immunisation in pregnancy among women in the UK targeted by such programmes. British Journal of Midwifery 23 (8), 566–573.
Gov.UK. Latest data reinforces the safety of COVID-19 vaccinations in pregnant women. 2022.
Gov.UK. Vaccine uptake among pregnant women increasing but inequalities persist. 2022.
UK Health Security Agency. Pregnancy: how to help protect you and your baby. 2022.
Holford, D, Schmid, P, Fasce, A, Lewandowsky, S., 2024. The empathetic refutational interview to tackle vaccine misconceptions: Four randomized experiments. Health Psychology 43 (6), 426–437.
Kaufman, J, Attwell, K, Hauck, Y, Omer, SB, Danchin, M., 2019. Vaccine discussions in pregnancy: interviews with midwives to inform design of an intervention to promote uptake of maternal and childhood vaccines. Hum Vaccin Immunother 15 (11), 2534–2543.
Licata, F, Pelullo, CP, Della Polla, G, Citrino, EA, Bianco, A, 2023. Immunization during pregnancy: do healthcare workers recommend vaccination against influenza? Frontiers in Public Health 11.
Lynch, MM, Mitchell, EW, Williams, JL, et al., 2012. Pregnant and recently pregnant women's perceptions about influenza a pandemic (H1N1) 2009: implications for public health and provider communication. Maternal and child health journal 16, 1657–1664.
Marín-Cos, A, Marbán-Castro, E, Nedic, I, et al., 2022. Maternal Vaccination Greatly Depends on Your Trust in the Healthcare System": A Qualitative Study on the Acceptability of Maternal Vaccines among Pregnant Women and Healthcare Workers in Barcelona, Spain. Vaccines 10 (12).
Mertz, D, Lo, CK-F, Lytvyn, L, et al., 2019. Pregnancy as a risk factor for severe influenza infection: an individual participant data meta-analysis. BMC Infectious Diseases 19 (1), 683.
NHS. Vaccinations in pregnancy. 2023. https://www.nhs.uk/pregnancy/keeping-well/vaccinations/.
NICE. Antenatal care 2021. www.nice.org.uk/guidance/ng201.
NICE, 2022. Evidence review for identification and recording of vaccination eligibility and status: Vaccine uptake in the general population: Evidence review A (NICE Guideline, No. 218).
Nursing and Midwifery Council. The Code. 2018.
O'Brien, BC, Harris, IB, Beckman, TJ, Reed, DA, Cook, DA., 2014. Standards for reporting qualitative research: a synthesis of recommendations. Academic medicine 89 (9), 1245–1251.
Parsons, J, Grimley, C, Atherton, H, Clarke, L, Hillman, S, Bick, D., 2024. What factors influence the uptake of vaccinations amongst pregnant women following the Covid-19 pandemic: A qualitative study. Midwifery 134, 104021.
Parsons, J., 2020. Changing risk and efficacy appraisals for flu vaccination amongst pregnant women. Coventry University.
Regan, AK, Tracey, L, Blyth, CC, et al., 2015. A prospective cohort study comparing the reactogenicity of trivalent influenza vaccine in pregnant and non-pregnant women. BMC Pregnancy and Childbirth 15 (1), 1–7.
Say, L, Chou, D, Gemmill, A, et al., 2014. Global causes of maternal death: a WHO systematic analysis. Lancet Glob Health 2 (6), e323–e333.
Schmidtke, KA, Kudrna, L, Noufaily, A, et al., 2022. Evaluating the relationship between moral values and vaccine hesitancy in Great Britain during the COVID-19 pandemic: A cross-sectional survey. Soc Sci Med 308, 115218.
Tamma, PD, Ault, KA, del Rio, C, Steinhoff, MC, Halsey, NA, Omer, SB., 2009. Safety of influenza vaccination during pregnancy. Am J Obstet Gynecol 201 (6), 547–552.
UK Health Security Agency, 2021. The Green Book: Immunisation against infectious disease. Department of Health and Social Care editor.
UK Health Security Agency. Prenatal pertussis vaccination coverage in England from January to March 2023 and annual coverage for 2022 to 2023. 2023.
Uk Health Security Agency. Prenatal pertussis vaccination coverage in England from January to March 2024, and annual coverage for 2023 to 2024, 2024.
UK Health Security Agency. Seasonal influenza vaccine uptake in GP patients: monthly data, 2023 to 2024, 2024.
Villar, J, Soto Conti, CP, Gunier, RB, et al., 2023. Pregnancy outcomes and vaccine effectiveness during the period of omicron as the variant of concern, INTERCOVID-2022: a multinational, observational study. Lancet 401 (10375), 447–457.

Vishram, B, Letley, L, Jan Van Hoek, A, et al., 2018. Vaccination in pregnancy: Attitudes of nurses, midwives and health visitors in England. Human Vaccines & Immunotherapeutics 14 (1), 179–188.
Walker, JL, Rentsch, CT, McDonald, HI, et al., 2021. Social determinants of pertussis and influenza vaccine uptake in pregnancy: a national cohort study in England using electronic health records. BMJ Open 11 (6), e046545.
Woodcock, T, Novov, V, Skirrow, H, et al., 2023. Characteristics associated with influenza vaccination uptake in pregnancy: a retrospective cohort study. Br J Gen Pract 73 (727), e148–ee55.