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Knowledge, experiences and attitudes of midwives in maternity care in encounters with pregnant women with obesity - are adverse childhood experiences understood and explored as a contributing factor?

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ABSTRACT

Objective: To explore knowledge, experiences and attitudes of midwives in maternity care in encounters with pregnant women with obesity, and whether they investigate adverse childhood experiences as a contributing factor to the weight challenges.
Design: Semi-structured interviews were undertaken to explore midwives' experiences of providing maternity care for women with obesity. For data analysis, Malterud's systematic text condensation was used, a method for thematic cross-case analysis of qualitative data with an inductive approach.
Participants and setting: Nine midwives working in maternity care in Central Norway. The interviews were conducted online or at the midwives' workplace.
Findings: The midwives routinely investigated pregnant women's childhood, but few saw a link between adverse childhood experiences and obesity. Pregnant women with obesity were perceived by the midwives as particularly vulnerable, which led to a sensitive, individualised approach focusing on trust and relationship building. This approach, in addition to pointing out complications that can occur with obesity, was described as a balancing act. The midwives described preventative healthcare as a natural task, but hectic days with many competing tasks were seen as an obstacle. The women's motivation for lifestyle change was experienced differently by the midwives; some described strong motivation while others mentioned poor motivation. The midwives found it reassuring to have experience to draw on in broaching difficult topics.
Key conclusions and implications for practice: Midwives' many years of experience enable them to approach obese pregnant women in an individual and careful way. Their mission in public health could be better utilised if they explored negative childhood experiences in relation to pregnant women's weight challenges.

Introduction

Obesity is associated with increased risk of maternal and fetal complications during pregnancy and childbirth, including increased risk of preeclampsia, gestational diabetes, prolonged labor, labor induction, caesarean delivery, and complications related to macrosomia (Aune et al., 2014; Catalano and Ehrenberg, 2006; Poorolajal and Jenabi, 2016). Furthermore, long-term implications for offspring health due to maternal obesity may include childhood obesity and the development of metabolic syndrome (Catalano and Ehrenberg, 2006). In 2020, 36% of pregnant women in Norway were overweight and 13.5% were obese in early pregnancy (Norwegian Institute of Public Health, 2020). Overweight and obesity have thus become a frequent risk fac-

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tor in obstetrics both nationally and internationally (Chen et al., 2018).

Weight development is affected by many complex factors (Christenson et al., 2018; Holton et al., 2017). McEwen and Stellar developed the model of allostasis, according to which physical and mental experiences involve the same biological systems in the body. Allostatic overload expresses how negative stress caused by e.g. trauma and powerlessness can overload the physiological adaptation mechanisms and cause illness (McEwan and Stellar, 1993). Several studies indicate an increased risk of obesity and chronic diseases in people with adverse childhood experiences (ACEs) (Felitti et al., 1998; Hemmingsson et al., 2014; Stranden et al., 2020; Wissa, 2020). There is also an increased incidence of pre-pregnancy obesity in women reporting negative childhood experiences (Diesel et al., 2016; Nagl et al., 2016; Ranchod et al., 2016). Previous studies have therefore suggested that childhood experiences should be investigated in early pregnancy (Nagl et al., 2016; Ranchod et al., 2016).

It has been shown that questions on sensitive topics like ACEs and intimate partner violence can be incorporated in routine antenatal care, but health care providers were not always used to asking these questions to all pregnant women. (Flanagan et al., 2018; Henriksen et al., 2017). A better understanding of whether midwives investigate ACEs in relation to weight challenges could therefore provide an opportunity for more appropriate support. While many studies have focused on the association between ACEs and pre-pregnancy weight, we lack qualitative studies exploring midwives' experiences of addressing ACEs when providing antenatal care for pregnant women with obesity. Stigmatisation of individuals with obesity is widespread in society, including in healthcare, and can affect the quality of the healthcare services provided (Nyman et al., 2010). Pregnant women with obesity have reported unpleasant encounters with health professionals (Nyman et al., 2010; Williams and Annandale, 2020), and several studies indicate that there is little expertise in discussing weight challenges in the healthcare system (Charnley et al., 2017; Knight-Agarwal et al., 2014; Wennberg et al., 2014). Wennberg et al. point out that midwives find it difficult to talk about weight for fear of offending pregnant women with obesity, which leads to an evasive approach and suboptimal care (Wennberg et al., 2014). This is confirmed by studies of midwives and pregnant women that show significant variation in how much lifestyle advice women with weight problems receive (Christenson et al., 2018; DeJoy et al., 2016).

Pregnancy is an important transitional phase of life, which involves regular contact with healthcare providers and often increases motivation for lifestyle change (Arabin, 2017). Greater motivation to change one's lifestyle and frequent contact with healthcare providers during pregnancy should be used to identify the underlying causes of weight challenges and whether the woman wants help and support (Holton et al., 2017; Knight-Agarwal et al., 2016).

In order to understand how midwives have developed skills and experiences to arrive at their approach to obesity in pregnancy, we can draw on Schön's theory of the reflective practitioner (Schön, 1987). Schön uses the term knowing-in-action in situations where a practitioner acts intuitively. In professional practice, there will also be situations where practitioners need to be observant and adapt their approach to the signals they pick up, called reflection-in-action. Finally, Schön uses the term reflection-on-reflection-in-action, which means that practitioners subsequently reflect on actions they have performed (Schön, 1987).

The purpose of this study is to explore knowledge, experiences and attitudes of midwives in maternity care in encounters with pregnant women with obesity, and whether they investigate ACEs in relation to weight challenges.

Method

Pregnant women in Norway follow a basic programme with at least nine consultations. This programme is free, and is implemented by a midwife or doctor in primary healthcare who assesses the woman's condition and any need for referral and care in the specialist health services (Norwegian Directorate of Health, 2018).

To answer our research question, we chose an inductive thematic data analysis based on Malterud's systematic text condensation well suited for exploring people's experiences and thoughts (Malterud, 2012, 2017). Data were collected through semi-structured in-depth interviews of midwives in maternity care.

This study was approved by Norwegian Centre for Research Data (NSD)(reference number: 504968). All participants provided written informed consent.

Sampling and recruitment

Strategic sampling was used to achieve variation among the midwives. Recruitment began by emailing the leaders of various primary maternity care services in a selection of small and large local authorities in Central Norway. These leaders were informed about the study topic and were asked to forward the information to the midwives. Out of 22 midwives, eight declined to participate due to limited time, while six agreed via email or text message. Subsequently, and in order to achieve variation in work location and experience, we used a snowball method asking participating midwives to contact colleagues. Three additional midwives were contacted and included after being suggested by the participating midwives.

Interviews

An interview guide (see supplementary material) was developed and agreed upon by all authors. Some of the questions were informed by Schön's theory of the reflective practitioner. Data specialists from the NSD read the interview guide and gave suggestions for improvements regarding data protection. Prior to the interviews, informants were provided with an additional oral overview of the research project and were encouraged to ask questions. Throughout the interviews, we intended to use person-centered language and to phrase our questions in a way that avoid the appearance of bias. As part of our previous work, we have collaborated with user representatives from the National Association for Overweight People and the Centre against Incest and Sexual Abuse Nord-Trøndelag. They advised us against using the term "obesity" and suggested several alternative terms that we chose to use in the interview guide. The interviews were conducted by the first author in September and October 2021. Four interviews were conducted at the midwives' workplace, while five took place online at the informants' request. Interviews were audiotaped, transcribed verbatim and anonymized. To stay close to Malterud's concept of "information power", we did not decide beforehand how many interviews to conduct but evaluated sample size continuously during the data gathering phase guided by the information power of the data (Malterud et al., 2016). Sufficient information power was reached after eight interviews. One additional interview was conducted to see if new information emerged. This last interview confirmed information from the previously collected data but did not contribute to new themes.

Analysis

The content was analysed using systematic text condensation (Malterud, 2017), a four-step model for thematic cross-case analysis of qualitative data inspired by Giorgi's phenomenological ap-

Table 1
Participant demographics and clinical background.

Characteristics	Number of informants (n=9), (%)
Age (years)	
25–39	2 (22%)
40–49	1 (11%)
50–59	4 (44%)
≥ 60	2 (22%)
Years of practice	
< 5	2 (22%)
5–10	2 (22%)
> 10	5 (55%)
Position	
Midwife in primary care	6 (66%)
Midwife in primary and secondary care	3 (33%)
Location	
Rural	3 (33%)
Semi-urban	2 (22%)
Urban	4 (44%)
Employment in primary care	
Full time	5 (60%)
Part time	4 (40%)
Additional qualifications (e.g. psychiatry or supervision)	
Yes	4 (40%)
No	5 (60%)

proach. In step one, each interview was read systematically to form an overall impression. Preliminary themes that could elucidate the research question were then identified and discussed by all authors. In the second step, the preliminary themes were sorted into code groups, and any meaning units identified were placed in the groups. In the third step, the codes were divided into subgroups. The content of the subgroups was reduced into condensates, which were read and evaluated in relation to the research question. The results of this step were read and discussed by all authors. In step four, the condensates were used to develop the analytical texts presented in the results section. The four main themes that ultimately formed the basis of the results are supported with quotes from the midwives. In order to focus on intuitive experiences from clinical practice, Schön's theory of the reflective practitioner was used as inspiration for creating the interview questions and discussing the results but was not involved in the analysis. The interviewer (EBH) was a student midwife without prior experience in qualitative research. The research team further comprised a midwife (HLS) and an obstetrician-gynaecologist (JH). Both HLS and JH have experience in qualitative research and in providing antenatal care for pregnant women with obesity and are familiar with the literature on the association of ACEs with obesity. Their preconceptions included the expectation of limited awareness of the role of ACEs on weight development among midwives in antenatal care. Throughout the data analysis researchers reflected upon their thoughts, assumptions, attitudes and interests to identify potential biases. The employed strategies included maintaining a reflexive journal and engaging in discussions on how the researchers' own role may interact with the data analysis.

Results

Nine midwives who worked in primary maternity care in various parts of Trøndelag county participated in the study. There was variation in age, experience as a midwife and full- or part-time positions in maternity care (Table 1). Four main themes emerged with multiple sub-themes (Table 2). The first main theme '*Reflections on causes of obesity and investigation of childhood background'*, describes how midwives understand obesity development pre-pregnancy, and if they link it to childhood adversities. The second theme '*Approaching the women as a balancing act with a focus on trust and openness'*, suggest that midwives have a balanced way based on prior experiences when approaching weight and lifestyle in antenatal care. The third main theme '*Barriers to further care'* shows how other competing tasks, limited resources and pregnant women's motivation affect midwives' perceived possibilities to guide pregnant women with weight challenges. The last main theme '*Responsibility, role understanding and experience*' suggests that midwives find lifestyle and weight guidance to be a natural task for midwives. Experiences and communication skills are seen as important advantages.

Reflections on causes of obesity and investigation of childhood background

The life we live and have lived shapes our body

The midwives felt that the causes of obesity were complex and a combination of nature and nurture. Poor eating routines, an unhealthy diet and low socio-economic status in childhood were mentioned by several as risk factors. Further, structural changes in society with a ready supply of junk food, time constraints and a decline in physical activity were considered to be contributing factors. Puberty, as a period of natural hormonal changes and the use of hormonal contraceptives, was felt to be a critical period for young girls' weight development. One midwife said: *"I think weight is affected by hormonal changes during puberty. Maybe they start with hormonal contraception and gain weight. Snack food and sweets have become more accessible. Maybe it often runs in the family as well. And then there can be psychological issues that make you eat comfort food. We are also more passive than before. Everyday activity has declined."* (Midwife 7). Several midwives also expressed concern about how young women are influenced by the media focus on the "ideal body" and fixation on appearance. Some midwives pointed to a link between high weight and neglect or traumatic events such as sexual abuse or bullying. One midwife said: "*It's based on their problems in the past. Some of them have a long history of being overweight, and they may have been bullied throughout their childhood. There's so much in the causes of overweight, so weight is just a symptom."* (Midwife 2).

The midwives found that some pregnant women asserted medical reasons for their obesity, but felt that this was rarely the real cause. Many thought that eating for comfort or as a reward was a risk factor for obesity. One midwife explained: "*Some women enter pregnancy with excess weight that doesn't seem normal. So then I think about the reasons for this, and sometimes I feel there's something psychological in it. Perhaps she's been using food or lack of exercise as a comfort or a reward."* (Midwife 8). The transition to the parental role was also mentioned as having a possible negative effect on the women's lifestyle due to increased stress and poor sleep.

Childhood as a key topic regardless of weight

The midwives said that at the first consultation they asked about the woman's childhood irrespective of her weight. A few midwives said that a high body mass index (BMI) was a reason to explore childhood experiences a little more deeply. Few midwives reported investigating childhood experiences solely in the context of obesity. To find out more about the pregnant women's childhood, the midwives thought it was important to ask about their relationship to their parents, siblings and other close family members. Further relevant topics were school, friends, hobbies and interests, housing and moving house. The midwives routinely asked pregnant women if they had suffered from violence, abuse or other traumatic events, and described how the women reacted differently when such topics were raised. Maternity care was seen as a natural setting to reflect on childhood: "*Maybe nobody's ever asked them about this before or they've never had to consider talking about*

Table 2
The analysis process.

Research question	Main theme	Code	Subcode	Quote
Knowledge, experiences and attitudes of midwives in maternity care in encounters with pregnant women with obesity - are adverse childhood experiences understood and explored as a contributing factor?	Reflections on causes of obesity and investigation of childhood background	1. Reflections on causes of obesity and investigation of childhood background	**Subcode 1:** The life we live and have lived shapes our body	*"It's based on their problems in the past…" "Some women enter pregnancy…"*
			Subcode 2: Childhood as a key topic regardless of weight	*"Maybe nobody's ever asked them…" "I talk to all pregnant women about their childhood and adolescence…"*
	Approaching the women as a balancing act with a focus on trust and openness	2. Approach	**Subcode 1:** Early assessment based on the "health card"	"When I've gone through the health card…"
			Subcode 2: Trust as a foundation for further care	*"You can soon see…"*
			Subcode 3: Personalized advice and feasible goals	*"It's important to treat them with respect…""I can talk about physical activity…"*
	Barriers to further care	3. Challenges	**Subcode 1:** Little to offer and many competing tasks	*"We do a whole range…"*
			Subcode 2: Motivation for lifestyle change	*"People say that pregnancy…" "I have very motivated…"*
			Subcode 3: Guilt, shame and increased vulnerability	*"I get all kinds of reactions…" "We midwives in primary care…"*
	Responsibility, role understanding and experience	4. Responsibility and role understanding	**Subcode 1:** Experience provides confidence	*"There are quite a few factors involved…"*
			Subcode 2: Health prevention is a natural task for midwives	*"It's a key aspect of…" "Here in maternity care…"*

their childhood. They may never have put these things into words." (Midwife 8).

In order to capture childhood experiences and important focus areas for the parental role, several midwives used a familiar Norwegian app created by Stine Sofie's Foundation, a children's rights charity (Stine Sofies Stiftelse, 2018). Most of the midwives found that the women revealed a great deal if they felt they could trust the midwife. One midwife explained: "*I talk to all pregnant women about their childhood and adolescence, but for some it doesn't take long. With others, there are various factors that make me think I have to dig a bit deeper, and then obesity is one of the factors that suggests there may be more to talk about and spend a bit more time on.*" (Midwife 8).

Mental health was also addressed in all pregnancy consultations, and some midwives found that many women had a great need to talk about this. Talking openly about mental health could help the women to open up about eating disorders, traumatic childhood experiences, or difficult family relationships. Some midwives reported having met pregnant women with obesity whose weight problems seemed to be related to childhood experiences.

Approaching the women as a balancing act with a focus on trust and openness

The "health card" opens the door to early assessment

In order to have sufficient time to advise pregnant women on lifestyle change, the midwives wanted to interview them early in the pregnancy. The Norwegian health card, which contains considerable information about the person's health and background, was used as a natural starting point for a talk about lifestyle, BMI and relationships. It was seen as important to assess the woman's motivation for lifestyle change. One midwife said: "*When I've gone through the health card and reached the calculation of BMI, I might say: 'Based on your height and weight, I can see that your BMI is now above normal. Have you thought about this? Has it always been like that?' So I go back in time a bit to let her say something about it herself.*" (Midwife 2). The midwives talked about this with all the women but if the BMI was high, they often delved a little deeper. During these interviews, individual assessments were made as to whether to focus on lifestyle change at the first consultation. Some midwives also asked about the diet of the woman's partner, since lifestyle change can be difficult to achieve alone, and thus support from the partner was considered important.

Trust as a foundation for further care

Some midwives in this study described their awareness of the pregnant woman's body language and facial expressions, and one said that she could already form an impression of a woman's mood in the waiting room. Some pregnant women refused to talk about weight, sometimes angrily. One midwife explained: "*You can soon see if it's painful and difficult or if they don't care, and then you can decide how to proceed. That's what it's all about when you meet other people. Seeing what kind of person you have in front of you. Being sort of like a chameleon and adapting how you talk and how you approach the person." (Midwife 3).* An important strategy described by many midwives was to let the pregnant women decide the pace and content of the dialogue, which could make the reticent ones open up because they came to trust the midwife. Many midwives described letting the women put their thoughts and feelings into words to ensure that they interpreted the information correctly. One explained that she noted down the woman's reactions to make sure she remembered them at the next consultation. Trust and a good relationship were described as crucial in discussing challenging topics. The midwives therefore took time to get to know the women at the first consultation, which could help them form an impression of how to continue the conversation.

The midwives emphasized the importance of relating to pregnant women with obesity in the same way as all other pregnant women. The health card was mentioned as a key tool in the dialogue, and since BMI is stated there, the pregnant women expected the topic to be addressed. A key strategy that the midwives used in talking about BMI was to start the conversation by saying that it could be a difficult topic. Open and direct questions could elicit a great deal of information about women's weight history. The midwives stressed the importance of providing information on health challenges that can arise during pregnancy, childbirth and later. Some midwives found that some women had often thought about

their weight, while others had never been asked about it or had to reflect on it.

Different ways of approaching weight and lifestyle were described. To prevent the women from feeling attacked, some midwives weighed their words carefully and adapted them to how receptive the woman was. Others found that the women did not mind if they were direct and emphasized that it must be made quite clear why this is an important topic. Being direct in a kind way and avoiding hurtful expressions was often mentioned. One midwife presented her approach as follows: "*It's important to treat them with respect and not fall into the trap of being judgemental or not talking about it, those are two mistakes we can make.*" (Midwife 2).

The midwives were concerned about not exacerbating the woman's situation but still found it necessary to discuss weight and its importance for further care. This was described as a delicate balance. Some midwives had found that pregnant women refused to discuss the topic because they had been too direct, and had to correct this by improving their conversational skills. Several midwives had a sensitive attitude towards pregnant women, and realised when they needed to focus on positive things. Rarely did the midwives experience that pregnant women did not return to the next consultation after a conversation about weight.

Personalized advice and feasible goals

Motivational interviews were used by some midwives to capture the pregnant woman's internal motivation. Several found that some pregnant women were most concerned about avoiding foods that were directly harmful to the fetus or that caused pregnancy problems such as heartburn. Some midwives built on this to give general advice on healthy living. One midwife pointed out: *«The most important thing I do is to see the woman. Not everyone is ready to discuss their weight and not everyone is aware of their weight. The approach will be different if the woman is motivated to hear about it."* (Midwife 9).

The midwives had different procedures for weighing pregnant women during consultations. Most midwives wanted all women to get weighed, and felt that this was part of maternity care. They said the majority accepted this. However, with some pregnant women, they made special agreements such as not having to check the weight every time. One midwife reported focusing on positive lifestyle changes rather than weight with women who clearly did not like having their weight checked.

Some midwives wanted to increase the women's awareness of diet, and identified their eating and sleep habits. They often found that pregnant women with obesity drank high-calorie beverages and ate infrequent large meals. Giving these women small, specific, personalised tasks often led to positive results. One midwife found it difficult to give lifestyle advice based on general guidelines when there was a great gap between reality and goals: "*I can talk about physical activity and what the national guidelines say, but then you have a lady with a BMI of 40 who's never sweated, gone for walks or exercised because it's unpleasant. So then that's not where you can start"* (Midwife 3).

Barriers to further care

Little to offer and many competing tasks

Some midwives reported having little to offer these women and few places to refer them to. They missed access to a psychologist and an easier path to mental healthcare, especially for women without previous referral. Midwives were considered to have the main responsibility for pregnant women. If the BMI was above 35, the midwives followed the national guidelines by referring the women to specialist healthcare. Otherwise, they described often having to provide further care themselves.

All midwives described a busy working day that included preventative healthcare, preparation for parenting and pregnancy check-ups. They sometimes wondered what they should prioritize. One described her work pressure as follows: "*We do a whole range of things. We have to check for risk, as in this group, as it will affect much of their lives, not just pregnancy. Prioritisation can be a bit difficult, depending on what we're looking at.*" (Midwife 4).

Motivation for lifestyle change

The midwives had varied experiences of the women's motivation for lifestyle change. Some found them to be unmotivated, with their main focus on pregnancy, childbirth and their baby, and a widespread culture of "enjoying themselves" a little more during pregnancy. When a woman lacked internal motivation, insight and desire to do something about her weight, several midwives found it difficult to continue the topic. Some also mentioned exercise groups and cooking courses for pregnant women, but found little interest. One midwife said this about motivation:

> "*People say that pregnancy is an opportunity for change, because women think in new ways and are more receptive to thinking positively and changing their lifestyle than otherwise, because they're going to have a baby. But I don't think it's easy to get rid of your baggage or change it when you're pregnant either.*" (Midwife 2).

Other midwives found that the women were motivated for lifestyle change. If they received dietary advice and specific tasks, they were often positive and experienced mastery. One said: "*I have very motivated women, keen to change, especially first-time mothers, who are so eager to listen to me and get good advice. They can't always follow the advice but I feel that many are very receptive.*" (Midwife 3).

Guilt, shame and increased vulnerability

The midwives usually found that pregnant women with obesity were aware of their weight challenges, and were more sensitive when weight and lifestyle were brought up. The women often had low self-esteem, a poor self-image and feelings of shame. Sometimes they reacted with resignation when the subject of weight was raised, and the midwives assumed that this was due to a negative focus on weight in their previous contact with healthcare workers. One midwife described this: "*I get all kinds of reactions. But it seems there's some guilt there, they're afraid of being judged for their appearance and because of specific measurements. There must be something wrong with them, they don't look normal. They think about that a lot, I'm afraid*" (Midwife 8).

The midwives pointed out that today's society focuses on the body, and several of them explained that they met women with low or normal BMI who also worried about their weight. The midwives perceived weight as a stigmatized topic, and several explained how attractive and normal-weight people are favoured in today's society. One midwife said: "*We midwives in primary care have an important job. I think we can do a lot there if we just take our time and find the ones with challenges and accept them, so we can remove some of the guilt and shame*" (Midwife 6).

Responsibility, role understanding and experience

Experience provides confidence

Several midwives said that as students and recent graduates they had found it difficult to talk about some topics but many encounters with pregnant women had given them experience and confidence. One explained: "*There are quite a few factors involved. I've become much more confident after many years' practice, and I've also lived a life myself. Those experiences give you confidence.*" (Midwife 5). Conversational skills were described as the midwives' most important tool, which could be improved throughout life. Difficult

conversations arose when the pregnant woman felt that questions about lifestyle were an attack and none of the midwife's business. The right approach to the topic was considered to be decisive for the outcome

Some midwives reported having a monthly consultation with a psychologist, and their colleagues gave them advice at work, which was important in difficult situations. If they experienced barriers to talking about difficult topics, it was recommended to just jump into it, which would lead to confidence in the long run. It was also mentioned that it was useful to practice on each other.

Health prevention is a natural task for midwives

The midwives felt that they had a duty to provide lifestyle guidance to pregnant women with weight challenges. They explained that nothing will change if a healthcare provider does not take on this task. Several stated that midwives had a mission in public health to do something for the unborn baby and ensure its good health. One said: "*It's a key aspect of what I do, because I absolutely see my job as preventative healthcare. When I meet a pregnant woman, I think that now I've got a few months to help or support someone who will be going through a development process*" (Midwife 8).

It was considered important for midwives to be confident and have a clear role in their job. Many saw conversations about lifestyle and weight as a duty, and emphasized that they would fail in this duty if they only talked about pleasant things. They pointed out that midwives must be explicit, but must also be aware of their power as a midwife, and tread carefully. One midwife explained: "*Here in maternity care, we concentrate on what's healthy and we should offer a strength-based service. So we have to find a balance when we talk to them so that when they leave here they feel just as valuable as when they came, that's a good goal to have*" (Midwife 2).

Several midwives found that doctors knew little about the pregnant body, and pointed out that many things are different in pregnancy. They felt that they could do a good job in encounters with pregnant women, but they were not psychologists or doctors and referred the women to others if the problems were too great. Some said that they needed to know more about nutrition. Some also described feeling uncomfortable when talking about mental health, even though they talked to all the women about this and had learned an approach that worked. Some believed that midwives could have a positive impact on women's future health by acknowledging their role as maternity advisors. A few had additional qualifications beyond midwifery, which they found useful in relation to various problems.

Discussion

In this study, we found that the midwives routinely checked the weight and childhood information of all women in early pregnancy, but only some saw ACEs as related to obesity. Pregnant women with obesity were perceived as particularly vulnerable, which affected the midwives' approach to weight and lifestyle.

As found in an Australian study (Holton et al., 2017), the midwives in this study considered that obesity has complex causes, where both nature and nurture are contributing factors. Taking time to get to know each other in the first consultation and being able to adapt to each individual were felt to be important in our study, which is supported by other literature (Wennberg et al., 2014). As in other studies, the midwives in our study pointed out the importance of stating clearly to pregnant women that obesity during pregnancy has short- and long-term negative consequences for both mother and child (Holton et al., 2017; Knight-Agarwal et al., 2014; Wennberg et al., 2014). The midwives felt that as health professionals they had a mission in public health, and considered it a duty to talk about lifestyle and obesity. These findings are supported by other studies from countries where midwives have a comparable role in maternity care (Christenson et al., 2018; Flannery et al., 2019; Smith et al., 2012).

Pregnant women with obesity's experiences of stigma and negative encounters with healthcare personnel have been documented in many studies of both midwives and the women themselves (DeJoy et al., 2016; Holton et al., 2017; Knight-Agarwal et al., 2016; Mold and Forbes, 2013; Nyman et al., 2010). A study from Ireland (Flannery et al., 2019) describes how healthcare professionals adapt their approach to pregnant women with obesity to avoid stigmatizing them, and try to find a balance between being empathetic and talking about the risks of obesity. These findings are consistent with our study, as is the description of the dilemma as a delicate balance (Christenson et al., 2018; Flannery et al., 2019). To establish trust and a good relationship, one must tread carefully and treat the woman with respect, as described in our study and in other literature (Christenson et al., 2018; Christenson et al., 2020; Holton et al., 2017; Knight-Agarwal et al., 2014; Smith et al., 2012; Wennberg et al., 2014). A meta-ethnographic synthesis (Jones and Jomeen, 2017) indicates that pregnant women with obesity are dissatisfied with the way midwives approach the subject of weight and give lifestyle advice, but are also dissatisfied if weight is not mentioned. The way the topic is approached and dealt with in consultations is therefore considered to be crucial.

Our findings suggest that professional experience enables midwives to go deeper into the topics and feel more confident about discussing weight. This can be described through Schön's theory of reflection-on-reflection-in-action (Schön, 1987), as experience and reflection on previous actions may have meant that further practice was based on positive and negative experiences, eventually evolving into an approach that worked. Some midwives reported weighing their words and adapting to how receptive they felt the woman was, which is a procedure described in several other studies (Christenson et al., 2018; Flannery et al., 2019; Holton et al., 2017; Smith et al., 2012). This approach can be understood as a result of previous experience from such consultations, but can also be explained through reflection-in-action, leading to strategies to deal with the situation (Schön, 1987).

Some of the midwives pointed out that maternity care can be greatly improved with better communication skills. Studies show that midwives trained in motivational interviewing feel more confident when talking about difficult topics (Christenson et al., 2018; Christenson et al., 2020). Midwives who had taken courses in motivational interviewing described a more confident attitude to difficult conversations. They also described the use of communication methods that can repair a conversation if they encounter resistance. A Swedish study from 2018 (Christenson et al., 2018) indicates that increased knowledge of communication through motivational interviewing is not sufficient to provide good dietary advice. Johnson et al. highlight the importance of midwives having knowledge of nutrition and physical activity during pregnancy (Johnson et al., 2013). However, several studies show that many healthcare professionals in maternity care lack this knowledge when advising women with obesity (Charnley et al., 2017; Christenson et al., 2018; McCann et al., 2018; Moldjord et al., 2015). These findings also concur with the experiences of some midwives in our study.

There are conflicting findings from studies exploring the motivation for lifestyle change of pregnant women with obesity, which is confirmed by our findings. Some studies describe strong motivation (Allen-Walker et al., 2017; Knight-Agarwal et al., 2016; Smith et al., 2012), while little motivation is seen in other studies (Holton et al., 2017; Knight-Agarwal et al., 2014; Knight-Agarwal et al., 2016). An Australian study shows that midwives disagree on whether pregnancy is the right time for lifestyle interventions. Some believe it is too late to start lifestyle changes during

pregnancy, while others feel that the increased motivation among pregnant women should be exploited (Knight-Agarwal et al., 2014). Midwives' attitudes will affect their approach to the topic and therefore also the women's motivation. Wennberg suggests strategies for exploring women's motivation for lifestyle change, and underlines the importance of not setting goals that are too high for the individual (Wennberg et al., 2014). These findings are supported by the present study, which demonstrates the importance of personalised advice to ensure motivation and positive changes in pregnant women.

Some midwives in our study had found that lifestyle change could be difficult to achieve even if the pregnant woman had a positive attitude to change. This is supported by a Norwegian study which shows that emotional baggage can be an obstacle to lifestyle changes (Følling et al., 2015). Several studies show a link between pre-pregnancy obesity and ACEs (Nagl et al., 2016; Ranchod et al., 2016). Some midwives in our study saw this link, but most of them investigated the women's childhood with no knowledge of the connection or the possible consequences for their approach to weight problems. A US study of gynaecologists, however, showed that several were aware of the association, but few reported investigating ACEs and their consequences (Farrow et al., 2018). As Norwegian midwives do explore these experiences, they are well placed to give pregnant women with obesity good follow-up care if they learn about the association between negative childhood experiences and obesity. A US study from 2018 (McDonnell and Garbers, 2018), which explored interventions in women with ACEs and obesity, showed that a focus on stress management and negative emotions, coupled with nutrition and physical activity, was important for these women.

Strengths and limitations

To the best of our knowledge, this is the first study to focus on ACEs in maternity care for women with obesity. The interview sample was very varied as to length of experience, seniority, age, size of position and size of local authority. A weakness of the sample may be that the midwives who decided to participate in the study were more motivated to help pregnant women with weight challenges than midwives in general, which may have reduced the transferability of the results. Four interviews were conducted at the midwives' workplace, which made it easier to observe and interpret non-verbal communication. The final five interviews were conducted online. This was an effective method of data collection, allowing for good dialogue and facilitating interviews with midwives in rural and remote areas, but online non-verbal communication is more difficult to notice and interpret, which may have affected the data quality.

Conclusion

Based on their professional experience, these midwives had developed a reassuring, considerate and individual approach towards pregnant women with obesity. Although childhood experiences are routinely explored in all pregnant women, only a few midwives saw a connection between ACEs and obesity. Optimal care for pregnant women with obesity requires a greater focus on communication skills and information about the association between weight challenges and negative childhood experiences. This can eventually reduce stigma and improve compliance with lifestyle advice, thus positively affecting the future health of these women and their children. Further research should investigate how pregnant women with obesity describe their weight history and whether they find that their childhood experiences and weight affect their maternity care.

Ethical approval

This study was approved by Norwegian Centre for Research Data (NSD)(reference number: 504968). All participants provided written informed consent.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRediT authorship contribution statement

Eline Haug Bjørsmo: Conceptualization, Data curation, Formal analysis, Writing – original draft. **Heidi L Sandsæter:** Conceptualization, Funding acquisition, Formal analysis, Supervision, Writing – review & editing. **Julie Horn:** Conceptualization, Funding acquisition, Formal analysis, Supervision, Writing – review & editing.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2022.103461.

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