

Women with a BMI \geq 30 kg/m² and their experience of maternity care: a meta ethnographic synthesis

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ABSTRACT

Objective:

This paper is a report of a systematic review and meta-ethnography of the experiences of women with body mass index (BMI) \geq 30 kg/m² and their experience of maternity care.

Method:

Systematic review methods identified 12 qualitative studies about women's experiences of maternity care when their BMI \geq 30 kg/m². Findings from the identified studies were synthesised into themes, using meta-ethnography.

Synthesis and Findings:

The meta-ethnography produced four key concepts; *Initial encounters*, *Negotiating risk*, *Missing out* and *The positive intervention*, which represent the experiences of maternity care for women with BMI \geq 30 kg/m².

Key Conclusion:

Many women with BMI \geq 30 kg/m² appear to be dissatisfied with the approaches taken to discuss weight status during maternity encounters. When weight is not addressed during these encounters women appear to be equally dissatisfied. The absence of open and honest discussions about weight, the feeling of being denied of a normal experience, and an over emphasis on the risks imposed upon pregnancy and childbirth by obesity, leave women feeling dissatisfied and disenfranchised. Sensitive care and practical advice about diet and exercise can help women move towards feeling more in control of their weight management.

Key Words: Obesity, health, maternity, women, health care professionals

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Introduction

According to the World Health Organisation (WHO), obesity is defined as a BMI ≥ 30 kg/m² (WHO 2016). The presence of obesity is increasing globally (Seidell, 2000; Shah, 2010; European Association for the Study of Obesity, 2013; WHO, 2016). United Kingdom (UK) figures suggest that 24.9% of the population are obese (NHS Choices, 2015), and tackling obesity has been prioritised by the government through a number of public health initiatives in the UK for the last decade. Obesity is linked to many negative health outcomes (WHO, 2016). Obesity in pregnancy is associated with an increased risk of gestational diabetes and hypertensive disorders of pregnancy including pre-eclampsia (Carpenter, 2007; Leddy et al. 2008; Royal College of Midwives (RCM), 2013; Jeyabalan 2013; Johnston et al. 2013). It is associated with a greater risk of maternal death in the UK (Nair et al 2015). According to the most recent UK Confidential Enquiry into Maternal Deaths, 'a third (33%) of the women who died in 2012–14 were obese' (Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK (MBRRACE-UK) (MBRRACE-UK, 2016, 28).

NICE Guidelines (2010) identify that health care professionals (HCPs) should have the skills to advise on the health benefits of weight management, the risks of being obese, and the nutritional needs of women in pregnancy. In addition, according to NICE (2010), maternity HCPs should be skilled at communicating sensitively and providing practical advice around diet and physical activity. HCPs are urged to explain the health risks associated with obesity at the earliest appointment (NICE, 2010).

Evidence suggests that HCPs feel unprepared for discussing weight management with women (Campbell et al. 2011). A systematic review of qualitative evidence of weight management during pregnancy by Johnson et al. (2013) proposes that this can be challenging for practitioners, as they fear that women may be sensitive to the issue of weight. Consequently, practitioners are apprehensive to discuss weight status, particularly, when it is considered to be a health risk. Johnson et al. (2013) identifies that women need 'sensitively delivered advice that accounts for their personal attitudes towards their weight and its management' (Johnson et al. 2013, 1295). Biro et al. (2013) in a study aimed at examining midwifery clinical practice for obese women, identified that almost half of the midwives interviewed were reluctant to inform women of their overweight status. Half the sample reported a lack of confidence to engage in counselling women, and to provide evidence based care (Biro et al. 2013). Reports of negative and ambivalent attitudes towards obese patients are evident across the wider literature. Collectively, studies highlight that obesity is highly a stigmatized identity, of which patients are acutely aware (Puhl and Heuer, 2009), impacting negatively on the patient-provider relationship (Brown, 2006). A study of patients' experiences of support in primary care, reveal patients encountered 'heavy handed, rushed and ambiguous communication' (Brown, 2006, 671), alongside limited levels of psychological support.

Whilst midwives are apprehensive to discuss weight with women who are obese, research indicates that women with a BMI ≥ 30 kg/m² are motivated to provide a nutritionally healthy environment for their babies (Heslehurst et al. 2015). According to Lavender and Smith (2015) women who present at antenatal clinics with a BMI ≥ 30 kg/m² expect and welcome being approached about their weight. Similar findings have been documented by Patel et al. (2013). In an exploration of obese women's reasons for declining referral to a weight management service during pregnancy, all participants approved of the referral process, and there were no negative responses towards being referred (Patel et al. 2013). A study by Swift et al. (2013) reflects these findings, women who had weight management raised during consultations, did not report negatively upon this experience. Despite a willingness on behalf of women to engage in weight management, a meta-analysis of 5 randomised controlled trials (RCTs) undertaken by Campbell et al. (2011), conclude that interventions designed to prevent excessive weight gain in pregnancy showed no clear evidence of effect.

HCPs working with women in the maternity context are mandated to advise on the health benefits of weight management, the risks of being overweight or obese, and the nutritional requirements of pregnancy (NICE, 2010). Above all, they are expected to ensure they have the communication techniques needed to broach the subject of weight management in a sensitive manner (NICE, 2010). The responsibility for ensuring that the 'right' approach is taken with respect to raising the issue of weight management rests firmly with the HCPs, however the features of successful communication techniques in this context are under researched. The barriers and facilitators to healthy lifestyle advice in the context of maternity care are relatively unknown.

Whilst quantitative synthesis provides evidence of the effectiveness of an intervention, qualitative synthesis can advance understanding of the appropriateness and acceptability of interventions (France et al. 2014). A growing number of studies capture the subjective experiences of obese women who are accessing maternity care. Not only do these studies offer unique insights into women's perceptions of how obesity is addressed in practice, they have the potential to provide some new understandings of practitioner-client interactions.

Meta ethnography was the method chosen as it is a widely-used approach in health research (Hannes and Macaitis, 2012). If well conducted and reported, it offers new conceptual understandings of complex health issues (Campbell et al. 2011). This review uses meta ethnography to explore the experiences of women who are obese, as they engage with HCPs. The aim of this work is to bring these studies together, and synthesize the key findings for clinical practice, and to use the findings to provide insights into the possible barriers and facilitators to healthy lifestyles advice and support with respect to practitioner-client encounters.

Methods

This is a synthesis of qualitative studies using a meta-ethnographic approach about the experiences of women with a BMI ≥ 30 kg/m² and above, and their encounters with HCPs across the perinatal period. One key criterion therefore was that the women in the studies were identified as obese (or having a BMI ≥ 30 kg/m²) within the paper. We were guided by the 7 steps in meta-ethnography as identified by Noblit and Hare, (1988). In addition, the work of Toye et al. (2014) and Britten et al. (2002) informed the process.

Guided by the Centre for Reviews and Dissemination (CRD 2009), a computer assisted systematic search and review approach was used to identify literature for inclusion in the review. Between October 2014 and April 2017, four electronic databases were searched for research studies of qualitative accounts of the experiences of women with BMI ≥ 30 kg/m² and their encounters with HCPs October 2014 and April 2017, four electronic databases were searched for research studies of qualitative accounts of the experiences of women with BMI ≥ 30 kg/m² and their encounters with HCPs. The search terms were as follows;

1. "health profess" or midwi*
2. antenatal or antepartum or "ante natal" or "ante partum" or preg* or childb*
3. obese* or "increased BMI"

Papers and studies were included if they reported on qualitative research which captured the experiences of women with a BMI ≥ 30 kg/m² and their interactions with HCPs during the perinatal period. We were specifically interested in women's perceptions of how their weight status was negotiated. We were also keen to evidence the use of skilled and sensitive communication (NICE 2010) in women's encounters with services. Finally, the experience of being obese and accessing maternity care was a general area of interest driving this work. Papers were included if they had evidence of the following;

- A qualitative approach to data collection, taken from women who were categorised as 'obese', (BMI ≥ 30 kg/m²)
- Detail about an experience during either an antenatal, intrapartum or postpartum encounter with an HCP in which the women's weight or size was discussed/mentioned/acknowledged
- A report of an encounter (or encounters) with an HCP (GP, midwife, nurse, health visitor or equivalent provider of maternity care with a registered qualification)

Given the evidence base pointing to a reluctance to discuss weight status (Johnson et al. 2013; Biro et al. 2013), women's perceptions of health professional 'avoidance' was important to explore. Papers were also

included if there was evidence of an encounter where women felt that a discussion about weight or size was avoided.

Case studies, literature reviews, meta analyses and studies not published in English were excluded. A citation search was undertaken to capture papers or published and unpublished work not accessible through database searching, using the citation lists of all the included work being reviewed. The titles and abstracts for all retrieved papers were screened and reviewed for relevance, and to assess whether they met the inclusion criteria. Full copies were obtained when papers appeared to possibly fit the inclusion criteria, and when relevance could not be determined by the title or abstract. These studies were reviewed to confirm or refute eligibility for inclusion. The Preferred Reporting Items for Systematic Reviews and meta-analyses flow chart (PRISMA), Figure 1, illustrates the process in more detail.

Quality Assessment

Quality assessment as part of the process of synthesising qualitative studies is a debated issue (Atkins et al. 2008; Ring et al. 2011). Providing the reader with some details of the methodological quality of the included studies was considered an important part of the process. Drawing upon the Critical Appraisal Skills Programme Qualitative Research Checklist (CASP, 2013) a critique of the selected papers was conducted based on the 10question checklist. Each question was dichotomised to yes (1 point) or no/can't tell (0 points), giving a scale ranging from 0 - 3 (low quality: C), 4 – 6 (medium quality: B), and 7 - 10 (high quality: A). Studies were assessed by two authors (CJ and JJ), there was broad agreement with decisions made about the quality of studies and each study was assigned a category of high (A), medium (B) and low quality (C). Most studies rated either medium or high, with only 1 study rated low.

Characteristics of Primary Studies

This meta ethnography is based on 12 studies undertaken in 5 high income countries between 2010 and 2017. 179 women were included, with sample sizes between 6 and 34. All authors used interview as a method of data collection. The studies (either wholly or partly) described and illustrated aspects of the experiences of women with BMI ≥ 30 kg/m² and their encounters with HCPs across the perinatal period.

Data abstraction and preliminary synthesis

We were guided by the seven steps of meta-ethnography as identified by Noblit and Hare (1988), modified using the work of Toye et al. (2014), and Britten et al. (2011). Noblit and Hare (1988) outline a 7-step process for conducting meta ethnography:

The seven steps of Noblit and Hare (1988)
Getting started
Deciding what is relevant to the initial interest
Reading the studies
Determining how the studies are related
Translating the studies into one another
Synthesising translations
Expressing the synthesis

Getting started

This process was undertaken by the authors individually. We began with an index or 'key' paper (identified as Paper 1 in Table 1). We recognised this paper to be '*conceptually rich and one which could potentially make an important contribution to the synthesis*' (Toye et al. 2014, 6). Using the key paper as a guide to identify further ideas from papers, we extracted all raw data that assisted us in the process of gaining a holistic understanding of the experiences of women with BMI ≥ 30 kg/m² or more and their encounters with HCPs. Using our data extraction form, we loaded the raw data from both the results and the discussion sections of the studies, and translated the initial concepts and findings from the key paper into the data from the other 11 papers. Having undertaken the process individually, we brought individual concepts together for further discussion and synthesis. Individual translations were found to be relatively comparable across all included studies. Examples of some of the 'individually arrived at concepts', or as Toye et al. (2014) refer to as conceptual categories, were '*suggestions of risk*', '*unspoken words*', and '*size as a barrier to wellbeing*', there were many more. We adopted a team approach to synthesizing conceptual categories into concepts. Noblit and Hare (1988) suggest 3 ways of synthesising translations, we interpreted our findings as a line of argument synthesis (Toye et al. 2014). Once the overall concepts became apparent, they were linked together in a line of argument that represents the experiences of women with BMI ≥ 30 kg/m² and their encounters with HCPs.

Expression of the synthesis/Findings

For the women in our sample (n = 179), the data illustrates that their encounters with HCPs could be complex, challenging and for some women, anxiety provoking. For other women, a more satisfying experience was articulated. The 4 key concepts which emerged from the data with respect to their experiences were identified as;

Initial encounters (Weir et al. 2010; Furness et al. 2011; Keeley et al. 2011; Atkinson et al. 2013; Mills et al. 2013; Lindhardt et al. 2013; Heslehurst et al. 2013; Lavender and Smith, 2015; Knight-Agarwal et al. 2016)

Negotiating risk (Weir et al. 2010; Furber and McGowan, 2010; Keeley et al. 2011; Furness et al. 2011; Atkinson et al. 2013; Mills et al. 2013; Lindhardt et al. 2013; Heslehurst et al. 2013; Lavender and Smith, 2015; Knight-Agarwal et al. 2016)

Missing out (Furber and McGowan, 2010; Nyman et al. 2010; Furness et al. 2011; Keeley et al. 2011; Mills et al. 2013; Lindhardt et al. 2013)

The positive intervention (Furness et al. 2011; Patel et al. 2013; Lavender and Smith, 2015; Knight-Agarwal et al. 2016)

These themes are presented below using women's narratives and the authors' interpretations.

Theme 1: Initial encounters

The way in which the early conversations occur about weight and weight status is important to women, and this theme captures women's reflections on initial encounters with HCPs. Data suggests that whilst women across the studies expected weight to be discussed during the earliest appointment, they experienced different approaches to talking about weight status. Some women identified that their weight status wasn't mentioned at all during the initial encounter:

Other than my midwife just saying, you know, just carry on as normal ... there was nothing specific from any health professional **(Weir, 2010)**

It probably is something that's kind of been skirted around a bit, only for reasons of maybe ... erm, other issues, I mean I was advised to wear TEDS [surgical stockings] and things like that. So I mean there are connections back to the fact that I'm overweight but nothing in specific terms **(Keeley et al. 2011)**

I've never been told before, either by my Doctor or anything ... which surprised me because I'm really overweight **(Lavender and Smith, 2015)**

For some women, the initial encounter involved an absence of any direct communication about their weight, but there were actions taken in relation to the perceived risk posed by their weight status. Data indicates that when weight status and size were NOT addressed during the initial encounter, but acknowledgement was made through their actions, women found this unpleasant and embarrassing:

The GP weighed me and measured my BMI without even speaking to me about it. Then I am referred to a special practice for fat pregnant women without my consent. I really feel stigmatized. It is quite all right to speak about smoking but

why can they not address the obesity as it is. I am much more upset now than if he had told me up front **(Lindhardt et al. 2013)**

I went for my first scan she scanned me and everything was fine. She never said anything to me. And then in the notes she's wrote, very difficult to examine due to high body mass **(Furber and McGowan, 2011)**

I just received a letter in the post, saying that I'd been put forward for it (weight management service) by my midwife. ... And no-one had warned me about it, and I think if someone had warned me about it, it would have been better, because I just opened the letter, read the letter and thought 'Oh God' and just burst into tears. It's a sensitive time anyway because your body's changing and you're conscious of what you look like anyway **(Atkinson et al. 2013)**

Theme 2: Negotiating risk

This theme captures the way in which risk was experienced and negotiated by women, and this featured significantly across the data. When HCPs identified weight as being a potential risk factor, data illustrates how women dealt with this in different ways. For some women, risk was experienced as 'doing something wrong', and they perceived their actions as constituting harm. A small number of women were left feeling tearful when their obese status and risk was addressed:

There was one consultant that I used to go to and he was a brilliant consultant but he had no bedside manner at all and he was horrible. He used to have me in tears – every time I'd go and see him, he'd tell me I was putting on too much weight, and he would literally shout at me. I don't smoke, I've never drunk throughout; it was the only thing that I was doing wrong and he used to have me in tears **(Furness et al. 2011)**

After I had given birth, and it was a dreadful experience, the midwife said to me that I should consider not being so obese next time I gave birth. Those words kept coming up and the rest of my stay at the hospital just turned out to be a struggle – uphill all the way ... **(Lindhardt et al. 2013)**

She'd told me that she was finding it hard to find the baby's heartbeat because I was overweight. I come out and I was in floods of tears. You think that you're

doing the baby some wrong. Where you weren't in a fit state when you started it, and you should have been **(Furber and McGowan, 2011)**

There were occasions when, despite what HCPs advised, women were able to reject the concept of risk:

I had to go and see the physio [therapist] as well, throughout the pregnancy, and basically everything's put down to because you're overweight. And you're like, well surely underweight people have to come and see the physio as well? Pregnancy's going to affect everybody in different ways' **(Keeley et al. 2011)**

At the end of the day I've brought up my first child and he's fine ... so, it's like he's not overweight, I know how to wean him, I know about healthy eating and all that, it's just me that's overweight **(Atkinson et al. 2013)**

You've got a good excuse to put on weight when you're pregnant so I haven't been that bothered **(Weir et al. 2010)**

Theme 3: Missing out

The concept of missing out captures how women reflected on their maternity care experience of being obese, and acknowledged how they felt that their weight status had denied them of something. Women felt that obesity rendered them unable to access or appreciate the same as other women. Clearly, women across the studies wanted to be treated the same as everyone else, and when they weren't. One woman identified that she was led to believe she would not be able to breastfeed:

I finally met my midwife. After approximately 10 minutes into the conversation, she suddenly said. 'Don't expect to be able to breastfeed when your BMI is so high' **(Lindhardt et al. 2013)**

For some women, 'missing out' came as a result of them feeling that their consultations were different. They had to undergo an experience that other women didn't:

I felt like, again I was being penalised because I was fat ... 'I used to say, oh I have to do the fat girls test again, have I?' All the time I felt like, 'they're picking on you because you're fat' ... **(Furness et al. 2011)**

Some women identified that HCPs didn't weigh them. Consequently, they felt they had been treated differently, and this was an issue:

Like for them to at least try and do what they need to do, and not sort of leave it, which happened a couple of times in my other pregnancies . . . I want the same sort of treatment as everyone else **(Mills et al. 2013)**

The midwife did not weigh me and we soon started talking about healthy life styles and exercise. I thought it was odd and I felt a bit confused and disappointed afterwards, like I was being deprived of something **(Lindhardt et al. 2013)**

Theme 4: The positive intervention

Women who reported positive experiences with HCPs with respect to weight status, also identified that their overall experience of weight management led to what they felt were favourable outcomes/results. This was linked to HCPs having a proactive and non-risk-focused approach to weight status;

They were brilliant and I put on over a stone this time, which I lost within a day of having my son! So it was completely different, and I saw a dietician, and I saw an instructor at the local gym, and she set me out a programme, so I could still go to the gym throughout it. It was just brilliant, and it was so different this time round, I can't explain how good it was! **(Furness et al. 2011)**

Yeah, he [family Doctor] were brilliant yeah ... You know like he was full of options and stuff **(Lavender and Smith, 2015)**

For some women, acknowledgment of the risks of their weight status by HCPs is important, as long as it was without judgement or blame, and women expect and value healthy lifestyles advice;

If I was just being told that being obese during pregnancy can harm my child – I will do anything to stay healthy and not harm either me or my child **(Lindhardt et al. 2013)**

As long as the midwife mentions it then its good **(Patel et al. 2013)**

My midwife's been really good. I've mentioned my weight a couple of times and she's not been really bothered about it, because everything else is going fine. Blood pressure and everything is ok (Keely et al. 2011)

Discussion

Overall, the data indicate a number of findings which were found to impact upon the experience of women who are obese. It was evident that some women had specific expectations of HCPs with respect to their weight status. Antenatally, women expected their obese status to be acknowledged in the early encounters with HCPs. More importantly, women wanted an open and honest, neutral unbiased discussion about their weight, preferably in the initial appointment. However, the time awarded to discussing weight and the associated risk their weight posed to the pregnancy, had to be appropriate, with other aspects of the consultation being afforded equal time and attention. Identifying that obesity can create a degree of risk to pregnancy and birth, as opposed to non-identification, was an acceptable approach for many women. Data suggests that women have a tendency to feel guilt and shame, and that some interactions may leave them feeling they fall short of an idealised standard of mothering. Clearly women appreciate a discussion between their weight status, and this is key to avoiding tension in the practitioner client relationship, however, over playing the concept of risk has a negative effect on women's feelings of self-worth; equally, under playing it, can leave women still feeling 'at risk' of something. The women across these studies had an inherent sense that there was a 'risk', but they wanted this to be handled sensitively. There was very little reference from women as to what they were told their babies or their pregnancies, or their birth experience were 'at risk' of. It could be that failure to state risks overtly and in greater detail, may be midwives and other HCPs attempts at being sensitive and not apportioning blame. However, the data suggests that women encountered an overall lack of clarity about their risk status, and equally a lack of clarity about the steps they need to take to gain 'non-risk' status.

Of additional interest in the data is that many women indicate that HCPs are unable to discuss weight status openly and clearly. Women felt that practitioners employed a set of actions to manage their weight issue, for example, documentation in the notes, and referring for further assessments, as opposed to undertaking clear and helpful discussion. Data indicates that women prefer to have their weight status addressed directly to them in face to face interactions. However, there is a complexity here; the data suggests that HCPs face the dilemma of 'avoid or confront'. In doing so, they are walking a difficult path, as 'confronting', i.e. being open and honest, means identifying risk, and risk appears to be associated with blame. This presents difficulties for HCPs, and there doesn't appear to be a diplomatic hand in this context. HCPs appear to be giving the impression that they are engaging in avoidance tactics. Satisfaction with care is often linked to the level at which women feels involved in, and has some control over, the process of their care (Slade et al. 1993; Tinkler and Quinney, 2001). Evidence suggests that women's feelings of being 'in

control' are impacted on by the positive attitudes of the professionals caring for them, information giving and being able to make and be included in decision-making (Gibbins and Thomson, 2001). This could be defined as supportive care, which has been identified both qualitatively and quantitatively as an important variable with regard to more positive experiences for women (Waldenstrom et al. 2004; Kitzinger, 2006; Kirkham, 2010). Hence failure to give information does not afford women any sense of control, neither does highlighting risk but not offering solutions.

Data suggests that women want to feel that their experience of antenatal, intra partum and the postpartum has been the same as that experienced by their peers. Women's accounts of their antenatal consultations suggest that in the context of pregnancy, women perceive the routine aspects of care to represent normality. Women's accounts of being denied access to the normal aspects of care, and normal aspects of caring for their baby suggest that they also perceived 'normality' to represent 'inclusivity'. This was evident in women's accounts; being told they would be unable to engage in things which women themselves perceive to be cornerstones of 'normality', left them feeling stigmatised; breastfeeding for example. Perceptions of penalisation and stigmatisation were lucid in women narratives.

The data provides some insights into positive interventions in the context of obese women's experiences. The perception of a positive encounter i.e. when women identify that HCPs were 'good' and 'brilliant' is inherently associated with action and intervention; adversely, negativity is linked to conflicting or absent healthy lifestyles advice. The positive actions and interventions in this review were associated with specialist services and access to appropriate advice from the knowledgeable people. In these situations, where an appropriate intervention is an option (for example a referral to a healthy lifestyles advisor or a dietician), the woman becomes the decision maker, and in many ways, drives the intervention. Thus, she becomes the core determinant of behaviour change.

Womens effective engagement with a suitable lifestyle intervention adds to a growing recognition of the value of theoretical models in clinical practice in the context of health behaviour change. This forms the central element of the Health Belief Model (HBM), one of the most widely used conceptual frameworks for understanding health behaviour. The suggestion with the HBM, and what is reflected in the data, is that whilst beliefs can successfully predict health behaviours, this also requires health motivation – readiness to be concerned about health matters – and perceived control – belief in personal ability to enact the behaviour (Becker and Rosenstock, 1984). It could be argued that women need access to accurate advice, alongside the encouragement to take control, and enact change to promote positive outcomes. Furthermore, the data suggests that assurances about continued wellbeing during pregnancy from HCPs, supported and evidenced by information from clinical observations remaining within the limits of

'normality', could act as mediators to the negative perceptions that women have with respect to the dominant discourse of risk.

Conclusions

This meta ethnographic approach provides a synthesis of concepts which represent women with a BMI \geq 30 kg/m² and their experience of maternity care. Research suggests that a significant proportion of HCPs in primary health care settings consider themselves insufficiently skilled to treat patients with obesity (Hansson et al. 2011). Furthermore, evidence exists to suggest that nurses perceive weight as a sensitive issue to discuss with patients (Greener et al. 2010; Mold and Forbes, 2013). The data supports and extends these findings, to illustrate how women perceive their encounters with HCPs when weight status is an issue.

Many women who are categorised as obese appear to be dissatisfied with the way in which their weight status is addressed (or not) when engaging with health. The data reported here suggests that women with a BMI \geq 30 kg/m² have clinical care and health advice needs which at times are not fully understood or addressed. This work set out to identify the possible barriers to, and the facilitators of effective engagement with strategies to reduce the health risks associated with obesity. HCPs should be aware that the absence of open and honest discussions about weight and weight management, the feeling of being denied of a normal experience, and an over emphasis on the risks imposed upon pregnancy and childbirth by obesity, leave women feeling dissatisfied and disenfranchised. These elements of the health care encounter may create barriers to women's positive engagement with effective weight management strategies. Care which acknowledges and explains what is meant by 'risk', and balances these discussions equally with support and advice about diet and physical exercise, can facilitate a sense control for women with respect to weight management. A sensitive but proactive approach to weight status, which includes the involvement of other services and individualised plans of care is effective for women. Central to the relationship of the woman and HCP is the recognition of the woman as competent and capable of engaging with healthy lifestyles. Clearly an enabling environment is required; and this in turn leads to an increase in women's self-perceptions of themselves as good mothers.

Practical implications

The work aimed to provide new understandings of client-practitioner interactions in the context of maternity care and obesity. Findings from the review indicate that the absence of open and honest discussions about weight and weight management, the feeling of being denied a normal experience and an over emphasis on the risks imposed upon pregnancy and childbirth by obesity, leaves women feeling dissatisfied and disenfranchised. In addition, findings demonstrate that care which acknowledges and explains what is meant by 'risk', and balances this equally with support and advice about diet and physical exercise is considered to be a facilitator to engagement with healthy lifestyles advice and support. Other

facilitators include a sensitive but proactive approach to weight status, the involvement of other services and individualised plans of care, and the recognition of the woman as competent and capable of engaging with healthy lifestyles advice and support.

Strengths and limitations

We have found the meta ethnographic approach using the Noblit and Hare (1988) framework as a guide, a useful tool to elicit concepts that increase our understanding of women's experiences of their encounters with HCPs, and the use of this approach has opened up possibilities for exploring other public health problems using the same framework. There are some limitations to this work. Firstly, we explored the views of women with BMI ≥ 30 kg/m² and this meant that the work failed to incorporate the views of women with a BMI of 25 – 29 kg/m², who may have similar experiences. A number of studies which used samples of women who were overweight and obese together had to be excluded from the review where the narratives of the women who were obese could not be identified.

Further research

This work has facilitated an exploration of the experiences of women with BMI ≥ 30 kg/m² as they engage with maternity care. Some insights have been gained into the possible facilitators to engagement with healthy lifestyles advice and support with respect to practitioner-client encounters. More research is clearly required to establish the most successful models of healthy lifestyle, diet and exercise support for women during the perinatal period. It is also important to understand the needs of different groups of women during this period of time so that interventions can be designed around individual needs. It remains to be seen if this work offers some insights into the possible barriers to engagement with strategies to reduce the health risks associated with obesity, as the issue of non-engagement is complex. Therefore, the relevance of our findings with respect to non-engagement with health lifestyles initiatives are largely unknown. It seems appropriate that further research should be directed towards using these findings to explore non-engagement in more detail.

References

Arden, M.A., Duxbury, A., Soltani, H. 2014. Responses to gestational weight management guidance: a thematic analysis of comments made by women in online parenting forums. *BMC Pregnancy & Childbirth*. Available online from;

<http://www.biomedcentral.com/content/pdf/1471-2393-14-216.pdf> [Accessed 12th April 2014]

Atkins, S., Lewin, S., Smith, H., Engel, M., Fretheim, A., Volmink, J. 2008. Conducting a meta ethnography of qualitative literature; lessons learnt. Available online from;

<http://bmcmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-8-21> [Accessed 8th April 2017]

Atkinson, L., Olander, E., French, DP. 2015. Acceptability of a weight management intervention for pregnant and post-natal women with BMI >30kg/m²: A qualitative evaluation of a service delivered in primary care settings which meets current UK public health guidelines. *Maternal and Child Health Journal*. Available online from <http://www.coventry.ac.uk/Global/PDF%20Documents/Atkinson%20et%20al%20BMC%20Preg%20and%20Childbirth%20submission%20Oct%202012.pdf> [Accessed 12th April 2014]

J. Baker, "Developing a care pathway for obese women in pregnancy and beyond," *British Journal of Midwifery*, vol. 19, no. 10, 632–643, 2011.

Becker, M.H., Rosenstock, I.M. 1984. Compliance with medical advice, in Steptoe, A, Matthews, A., (Eds) *Healthcare and Human behaviour*. London. Academic Press.

Biro, M.A., Cant, R., Hall, H.G., Bailey, C., Sinni, S., East, C. 2013. How effectively do midwives manage the care of obese pregnant women? A cross sectional survey of Australian midwives. *Women and Birth* 26 (2), 119 – 124.

Britten, N., Campbell, R., Pope, C., Donovan, J., Morgan, M., Pill, R. 2002. Using meta ethnography to synthesise qualitative research: a worked example. *Journal of Health Services Research Policy* 7(4), 209-215.

Brown, I., Thomson, J., Todd, A., Jones, G. 2006. Primary care support for tackling obesity: a qualitative study of the perceptions of obese patients. Available online from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1876632/pdf/bjpg56-666.pdf> [Accessed 7th December 2014]

Buxton, B., Snethen, J., 2013. Obese women's perceptions and experiences of healthcare and primary care providers. *Nursing Research* 62 (4), 252 – 259.

Campbell, R., Pound, P., Morgan, M., Daker White, G., Britten, N., Pill, R., Yardley, L., Pope, C., Donovan, J., 2011. Evaluating meta ethnography: systematic analysis and synthesis of qualitative research. *Health Technology Assessment*, 15 (43), 1 – 164.

Carpenter, M.W., 2007. Gestational diabetes, pregnancy hypertension, and late vascular disease. *Diabetes care* 30 (2), 246-50.

Centre for Maternal and Child Enquiries (CEMACE), 2010. *Maternal obesity in the UK, findings from a national project*. London. CEMACE.

Centre for Research and Dissemination, 2009. *Guidance for undertaking reviews in healthcare*. Available online from; <http://www.york.ac.uk/crd/SysRev/ISSI/WebHelp/SysRev3.htm> [Accessed 7th February 2017]

Confidential Enquiry into Maternal and Child Health (CEMACH), 2007. *Saving mothers lives: reviewing maternal deaths to make motherhood safer*. Department of Health, CEMACH.

Critical Appraisal Skills Programme (CASP), 2013. *Qualitative Research checklist*. Available online from;

http://media.wix.com/ugd/dded87_29c5b002d99342f788c6ac670e49f274.pdf [Accessed 7th February 2017]

Department of Health (DoH), 2010. Healthy lives, health people: our strategy for public health in England, London. Department of Health Stationary Office.

European Association for the Study of Obesity (EASO), 2013. About obesity. Available online from; <http://easo.org/media-portal/obesity-facts-figures/about-obesity/#3> [Accessed 4th December 2016]

France, E.F., Ring, N., Thomas, R., Noyes, J., Maxwell, M., Jepson, R., 2014. A methodological systematic review of what's wrong with meta ethnography reporting. Available online from; <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-14-119> [Accessed 4th December 2016]

Furber, C.M., McGowan, L., 2011. A qualitative study of the experiences of women who are obese and pregnant in the UK. *Midwifery* 27 (4), 437-44.

Furness, P.J., McSeveny, K., Arden, M.A., Garland, C., Dearden, A.M., Soltani, H., 2011. Maternal obesity support services: a qualitative study of the perspectives of women and midwives. *BMC Pregnancy and Childbirth*. Available online from; <http://www.biomedcentral.com/content/pdf/1471-2393-11-69.pdf> [Accessed 2nd September 2013]

Gibbins, J., Thomson, A.M., 2001. Womens expectations and experiences of childbirth. *Midwifery* 17 (4), 303 – 312.

Greener, J., Douglas, F., Teijilingen, E., 2010. More of the same? Conflicting perspectives of obesity causation and intervention amongst overweight people, health professionals and policy makers *Social Science & Medicine* 70, 1042-1049.

Hansson, L., Rasmussen, F., Ahlstrom, G., 2011. General practitioners and district nurses conceptions of the encounter with obese patients in primary health care. *BMC Family Practice* 12 (7), 1 – 10.

Hannes, K., Macaitis, K., 2012. A move to more systematic and transparent approaches in qualitative evidence synthesis: update on a review of published papers. *Qualitative Research*, 12 (4), 402 – 442.

Heslehurst, N., Russell, S., Brandon, H., Johnston, C., Summerbell, C., Rankin, J., 2015. Women's perspectives are required to inform the development of maternal obesity services: a qualitative study of obese pregnant women's experiences. *Health Expectations* 18, 969–981.

Jeyabalan, A., 2013. Epidemiology of preeclampsia: impact of obesity. *Nutritional Review* 70, 1-14.

Johnson, M., Campbell, F., Messina, J., Preston, L., Buckley Woods, H., Goyder, E., 2013. Weight management during pregnancy: A systematic review of qualitative evidence 29, 1287 – 1296.

Keely, A., Gunning, M., Denison, M., 2011. Maternal obesity in pregnancy: women's understanding of risks. *British Journal of Midwifery* 19 (6), 344 – 348.

Keenan, J., Stapleton, H., 2010. Bonnie babies? Motherhood and nurturing in the age of obesity. *Health, Risk and Society* 12 (4), 369 – 383.

Khazaezadeh, N., Pheasant, H., Bewley, S., Mohiddin, A., Oteng-Ntim, E., 2011. Using service-users' views to design a maternal obesity intervention. *British Journal of Midwifery* 19 (1), 49 – 52.

Kirkham, M., 2010. *The midwife-mother relationship* 2nd Eds, Hampshire. Palgrave Macmillan.

Kitzinger, S., 2006. *Birth crisis*. Oxon, Routledge.

Knight-Agarwal, C., Williams, L.T., Davis, D., Davey, R., Shepherd, R., Downing, A., Lawson, K., 2016. The perspectives of obese women receiving antenatal care: a qualitative study of women's experiences. *Women and Birth* 29, 189-195.

Lavender, T., Smith, D.M., 2015. Seeing it through their eyes: a qualitative study of the pregnancy experiences of women with a body mass index of 30 or more. *Health Expectations* 19, 222–233.

Leddy, M.A., Power, M.L., Schulkin, J., 2008. The impact of maternal obesity on maternal and fetal health. *Reviews in Obstetrics and Gynaecology* 1, 170–178.

Lindhardt, C.L., Rubak, S., Mogenson, O., Lamont, M.F., Joergenson, J.S., 2013. The experience of pregnant women with a body mass index >30 kg/m² of their encounters with health professionals. Available online from:

<http://onlinelibrary.wiley.com/doi/10.1111/aogs.12186/pdf> [Accessed 2nd September 2013]

Mills, A., Schmied, V.A., Dahlen, H.G., 2011. 'Get alongside us', women's experiences of being overweight and pregnant in Sydney, Australia. Available online from:

<http://onlinelibrary.wiley.com/doi/10.1111/j.1740-8709.2011.00386.x/epdf> [Accessed 2nd September 2013]

Mold, F., Forbes, A., 2013. Patients and professionals experiences and perspectives of obesity in health-care settings: a synthesis of current research. *Health Expectancy* 16 (2), 119 – 142.

Mothers and Babies Reducing Risk through Audits and Confidential Enquiries across the UK (MBRACE), 2016. Saving lives, improving mothers' care. Available online from;

<https://www.npeu.ox.ac.uk/downloads/files/mbrance-uk/reports/MBRRACE-UK%20Maternal%20Report%202016%20-%20website.pdf> [Accessed 2nd March 2017]

Mulherin, K., Miller, Y.D., Barlow, F.K., Diedrichs, P.C., Thompson, R., 2013. Weight stigma in maternity care: women's experiences and care providers' attitudes. *BMC Pregnancy Childbirth*. Available online from;

<http://www.biomedcentral.com/content/pdf/1471-2393-13-19.pdf> [Accessed 2nd September 2013]

Nair, M., Kurinczuk J.J., Brocklehurst, P., Sellars, S., Lewis, G., Knight, M., 2015. Factors associated with maternal death from direct pregnancy complications: a UK national case-control study. Available online from;

<http://onlinelibrary.wiley.com/doi/10.1111/1471-0528.13279/epdf> [Accessed 2nd March 2017]

National Health Service (NHS) Choices, 2015. Obesity: overview. Available online from; <http://www.nhs.uk/conditions/obesity/Pages/Introduction.aspx> [Accessed 2nd March 2017]

National Institute for Health and Clinical Excellence (NICE) Guidelines, 2010. Weight management before, during and after pregnancy, NICE, Department of Health.

Noblit, G.W., Hare, R.D, 1988. Meta-ethnography: synthesizing qualitative studies. Newbury Park, Sage Publications.

Nyman, V.M.K., Prebensen, A.K., Flenser, G.E.M, 2010. Obese women's experiences of encounters with midwives and physicians during pregnancy and childbirth. *Midwifery* 26 (4), 424 – 429.

Olander, E., Fletcher, H., Williams, S., Atkinson. S., Atkinson, L., Turner, A., French, D.P., 2013. What are the most effective techniques in changing obese individual's physical activity self-efficacy and behaviour: a systematic review and meta-analysis? *International Journal of Behaviour, Nutrition and Physical Activity*. Available online from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3639155/pdf/1479-5868-10-29.pdf> [Accessed 13th June 2014]

Olander, E.K., Atkinson, L., Edmunds, J.K., French, D.P., 2012. Promoting healthy eating in pregnancy: What kind of support services do women say they want? *Primary Health Care Research and Development* 13 (3), 237-243

Patel, C., Atkinson, L., Olander, E.K., 2013. An exploration of obese pregnant women's views of being referred by their midwife to a weight management service. *Sexual and Reproductive Healthcare* 4, 139 – 140.

Puhl, R.M., Heuer, C.A., 2009. The Stigma of Obesity: A Review and Update. Available online from http://img2.timg.co.il/forums/1_142509019.pdf [Accessed 21st March 2017]

Ring, N., Ritchie, K., Mandava, L., Jepson, R., 2011. A guide to synthesizing qualitative research for researchers undertaking health technology assessment and systematic reviews. Available online from; <http://www.nhshealthquality.org/nhsqis/8837.html> [Accessed 21st March 2017]

Royal College of Midwives (RCM), 2013. Obesity in pregnancy is a real concern says midwives. Available online from; <https://www.rcm.org.uk/news-views-and-analysis/news/%E2%80%98obesity-in-pregnancy-is-a-real-concern-says-midwives%E2%80%99>

Shah, A., 2010. Obesity. Available online from; <http://www.globalissues.org/article/558/obesity> [Accessed 21st March 2017]

Seidell, J.C., 2000. Obesity, insulin resistant diabetes – a worldwide epidemic. *British Journal of Nutrition* 83, 5-8.

Slade, P., McPherson, S.A., Hume, A., Maresh, M., 1993. Expectations, experiences and satisfaction with labour. *British Journal of Clinical Psychology* 32, 469 – 483.

Soltani, H., Furness, P.J., Arden, M.A., McSeveny, K., Garland, C., Sustar, H., Dearden, A., 2012. Womens and Midwives Perspectives on the design of a text messaging support for maternal obesity services: an exploratory study. *Journal of Obesity* 12, 1-10.

Swift, J.A., Choi, E., Puhl, R.M., Glazebrook, C., 2013. Talking about obesity with clients: preferred terms and communication styles ok UK pre-registration dieticians, doctors and nurses. *Patient Education Counselling* 91, 186–191.

Tinkler, A., Quinney, D., 2001. Team midwifery: the influence of the midwife-woman relationship on women's experiences and perceptions of maternity care. *Journal of Advanced Nursing* 28 (1), 30 – 35.

Toye, F., Seers, K., Allcock, N., Briggs, M., Carr, E., Barker, K., 2014. Meta-ethnography 25 years on: challenges and insights for synthesising a large number of qualitative studies. *BMC Medical Research Methodology* 14 (80), 1-14.

Waldenström, U., Hildingsson, I., Rubertsson, C., Radestad, I., 2004. A negative birth experience: Prevalence and risk factors in a national sample. *Birth* 31, 17–27.

Weir, Z., Bush, J., Stephen, C.R., McParlin, C., Rankin, J., Bell, R. 2010. Physical activity in pregnancy: a qualitative study of the beliefs of overweight and obese pregnant women. *BMC Pregnancy and Childbirth*. Available online from; <http://www.biomedcentral.com/content/pdf/1471-2393-10-18.pdf> [Accessed 21st March 2017]

World Health Organisation (WHO), 2016. Health topics: obesity. Available online from; <http://www.who.int/topics/obesity/en/> [Accessed 21st March 2017]

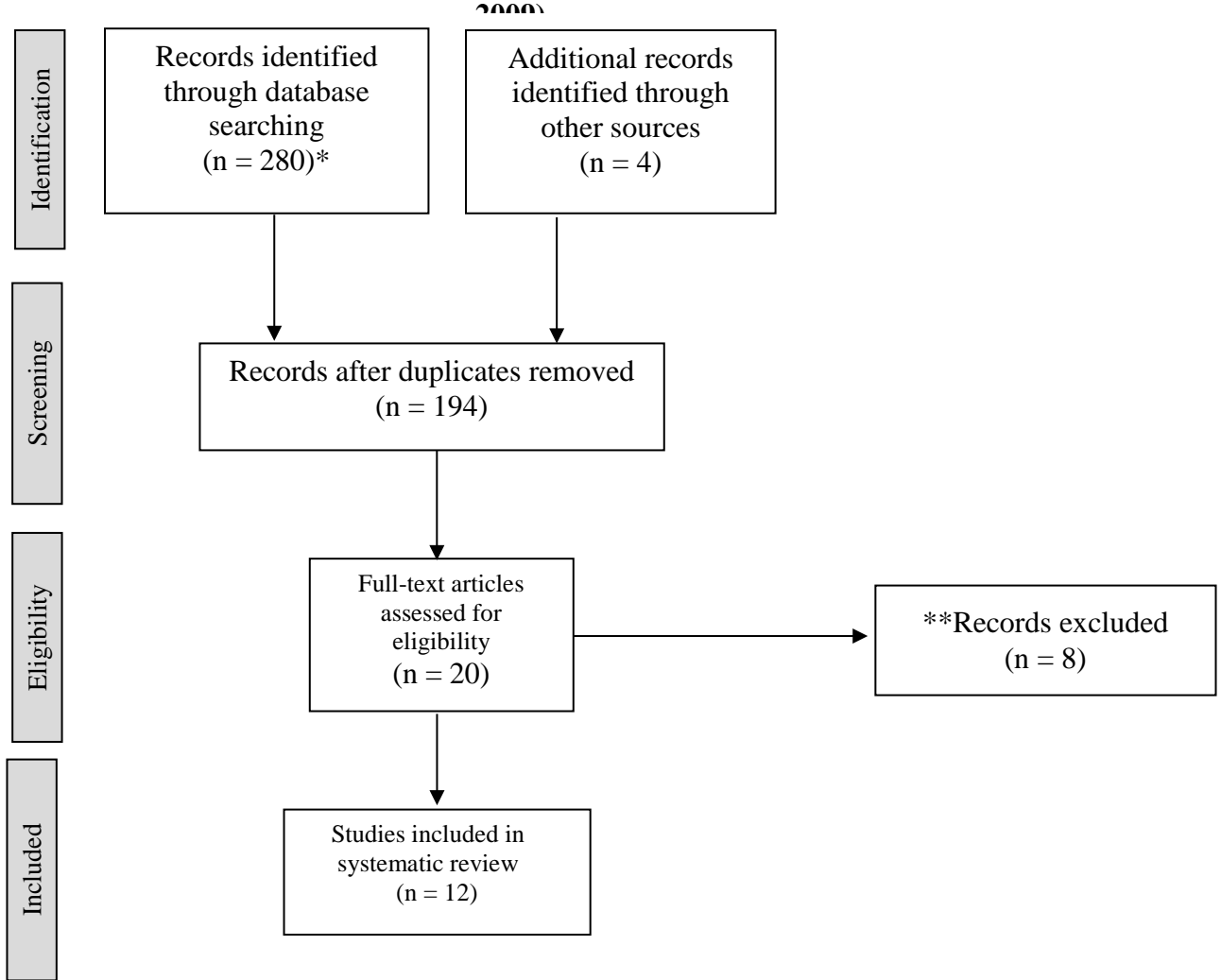
Table of Included Studies: Table 1

Author and Country	Method of investigation	Aims/Objectives	Sample size	Recruitment strategy	Study setting	Key findings	CASP (2013)
1. Knight-Agarwal CR, Williams LT, Davis D, Davey R, Shepherd R, Downing A, Lawson K (2016) Australia	Qualitative study using individual interviews	To investigate the perspectives of pregnant women with a BMI ≥ 30 kg/m ² receiving antenatal care	16 women with BMI ≥ 30 kg/m ²	In-person recruitment through researcher contact at an antenatal clinic	Maternity setting	Four super ordinate themes illustrating maternal obesity were identified; <ol style="list-style-type: none"> 1. <i>Obese during pregnancy as part of a long history of obesity</i> 2. <i>Lack of knowledge of the key complications of obesity for both mother and child</i> 3. <i>Communication about weight and gestational weight gain (GWG) can be conflicting, confusing and judgemental</i> 4. <i>Women are motivated to eat well during pregnancy and want help to do so</i> 	High
2. Lavender T, Smith DM (2015) England, United Kingdom	Qualitative methodology using focus group discussions and semi structured interviews	To gain insight into the experience of pregnant women with BMI ≥ 30 kg/m ² , when accessing maternity services and attending a community lifestyle programme	34 women with BMI ≥ 30 kg/m ²	In-person recruitment through midwife contact at a specialist clinic	Community setting	Three main themes were identified relating to the experience of pregnant women with BMI ≥ 30 , when accessing maternity services and attending a community lifestyle programme: <ol style="list-style-type: none"> 1. <i>Disappointment with pregnancy (this relates to women feeling that adequate information from health professionals about weight and gestational weight management (GWM) was not forthcoming)</i> 2. <i>Readiness to make a lifestyle change</i> 3. <i>Spurred on by success</i> 	High
3. Patel C, Atkinson L, Olander EK (2013) England, United Kingdom	Qualitative methodology using telephone interviews	To assess if service referral contributes to obese women's decision to decline a weight management service	15 women with BMI ≥ 30 kg/m ²	Unknown	Unknown	Three main themes were identified which relate to whether service referral contributes to obese women's decision to decline: <ol style="list-style-type: none"> 1. <i>Information from the midwife</i> 2. <i>Midwives in an ideal position</i> 3. <i>Expectation of the midwife</i> Women approved of the referral process.	Low
4. Atkinson L, Olander EK, French DP (2013) England, United Kingdom	Qualitative methodology using cross sectional interviews	To investigate why some women referred to a healthy weight service chose not to use, or disengaged with the service	18 women with BMI ≥ 30 kg/m ²	Women who chose not to use, or disengaged with the service were approached by the healthy weight service project lead	Unknown	Four themes were identified in the data which relate to women choosing to decline or disengage with the service: <ol style="list-style-type: none"> 1. <i>First contact counts</i> 2. <i>Missed opportunities for support</i> 3. <i>No need for help</i> 4. <i>Service not meeting needs</i> 	Medium
5. Mills A, Schmied VA, Dahlen HG (2013) Australia	Qualitative methodology: face to face interviews	To explore women's perceptions and experiences of attending two maternity units in Sydney, Australia	14 women with BMI > 30 kg/m ²	In-person recruitment through midwife contact at a specialist clinic	Participant's home setting and maternity setting	Four themes were identified in the data which relate to women's perceptions and experiences of attending two maternity units: <ol style="list-style-type: none"> 1. <i>Being overweight and pregnant</i> 2. <i>Being on a continuum of change</i> 3. <i>Get alongside us</i> 4. <i>Wanting the same treatment as everyone else</i> 	High
6. Lindhardt CL, Rubak S, Mogensen O, Lamont F, Stenet J (2013) Denmark	Qualitative methodology: face to face in-depth interviews	To describe the experiences of pregnant women with a pre-pregnant BMI > 30 kg/m ²	16 women with a pre-pregnant BMI > 30 kg/m ²	In-person recruitment through midwife contact at a specialist clinic. Women randomly selected	Participant's home setting	Two dominant themes emerged which reflect the experiences of pregnant women with a pre-pregnant BMI > 30 during their interface with health professionals: <ol style="list-style-type: none"> 1. <i>An accusatorial response from healthcare professionals</i> 2. <i>Lack of advice and helpful information</i> 	High

		during their interface with health professionals		by the author by date of birth and weekday			
7. Heslehurst N, Russell S, Brandon H, Johnston C, Summerbell C, Rankin J (2013) England, United Kingdom	Qualitative methodology: One-to-one depth-interviews	To explore women's lived experiences of being obese and pregnant to inform the development of services that women will find acceptable and utilize	15 women with BMI > 30 kg/m ²	Postal and In-person recruitment through midwife contact at a specialist clinic	Maternity and community setting	Four overarching themes were identified which reflect women's lived experiences of being obese and pregnant: 1. <i>Women's weight</i> 2. <i>Women's families</i> 3. <i>Women's experience of negativity</i> 4. <i>Women's priorities and desired outcomes</i>	High
8. Furness PJ, McSeveny K, Arden MA, Garland C, Dearden AM, Soltani H (2011) England, United Kingdom	Qualitative methodology: Semi structured focus group discussions	To explore women's experiences of managing weight in pregnancy and the perceptions of women, midwives and obstetricians of services to support obese pregnant women in managing their weight	6 women with BMI ≥ 30 kg/m ²	In-person recruitment through a midwife contact at a specialist clinic	Community setting	Two overarching themes were identified which represent women's experiences of managing weight in pregnancy: 1. <i>Explanations for obesity and weight management</i> 2. <i>Best care for overweight women</i>	High
9. Furber CM, McGowan L (2010) England, United Kingdom	Qualitative methodology: Face to face semi structured interviews and field notes	To explore the experiences related to obesity in women with BMI > 35 kg/m ² during the childbearing process	19 women with a BMI > 35 kg/m ²	In-person recruitment through midwife contact at a specialist clinic	Maternity setting	This paper reports on 2 sub-themes from the feelings associated with child bearing when obese: 1. <i>The humiliation of being pregnant when obese</i> 2. <i>The medicalisation of obesity when pregnant</i>	High
10. Keeley A, Gunning M, Denison F (2011) Scotland, United Kingdom	Qualitative methodology: Open ended semi structured interviews	To explore obese women's experiences of pregnancy care and perceptions of obesity as a risk factor in pregnancy	8 women with a BMI > 40 kg/m ²	In-person recruitment through midwife contact at a specialist clinic	Participant's home setting	Five overarching themes were identified which reflect women's experiences of pregnancy care and perceptions of obesity as a risk factor in pregnancy: 1. <i>Perceptions of health</i> 2. <i>Medical/obstetric problems</i> 3. <i>Risk awareness</i> 4. <i>Risk awareness and lived experience</i> 5. <i>Experience of NHS maternity care</i>	Medium
11. Nyman VMK, Prebensen AK, Flensner GEM (2010) Sweden	Qualitative methodology: interviews	To describe obese women's experiences of encounters with midwives and physicians during pregnancy and childbirth	10 women with a BMI > 30 kg/m ²	In-person recruitment through midwife contact at a specialist clinic	Participant's home setting and maternity setting	Obesity in the pregnant women evokes a constant awareness of the body and its exposure to the scrutiny of others, which may lead to negative emotions and discomfort. Humiliating treatment adds to the discomfort, whilst emotionally supportive encounters counteract the discomfort and facilitate wellbeing	Medium
12. Weir Z, Bush J, Robson SC, McParlin C, Rankin J, Bell R (2010)	Qualitative methodology: semi structured in-depth interviews	To explore the views and experiences of overweight and obese pregnant women and inform interventions which could	8 of the sample had BMI ≥ 30 kg/m ²	Unclear	Participant's home setting	Data arranged into analytical typologies of: 1. <i>Behaviour beliefs/attitude</i> 2. <i>Control beliefs</i> 3. <i>Normative beliefs</i>	Medium

England, United Kingdom		promote the adoption of physical activity during pregnancy				Findings suggest women have awareness of the benefits of healthy eating in pregnancy than physical activity. Participants lacked access to consistent information advice and support regarding physical activity during pregnancy	
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Figure 1: PRISMA flowchart of review phases (adapted from Moher et al.



* PsychINFO 15, Academic Search Premier 85, Medline 112, Cinahl complete 68

** Full-text articles excluded (n=8)

Reasons for exclusion:

- Unable to determine which participants were specifically BMI ≥ 30 kg/m²: (n=5) Stengel et al (2012), Lingetun et al (2017), Keenan and Stapleton (2010), Chang et al (2015), Arden et al (2014)
- No reports of a specific encounter with health professional provided: (n=2) Fieril et al (2017), Orlander et al (2012),
- Unable to determine if encounter was pre-conception or antenatal, intrapartum or postpartum: (n=1) Khazaezadeh et al (2011)