



City Research Online

City, University of London Institutional Repository

Citation: Lucas, G. ORCID: 0000-0001-5941-5233, Olander, E. K. ORCID: 0000-0001-7792-9895 and Salmon, D. ORCID: 0000-0003-2562-2116 (2019). Healthcare professionals' views on supporting young mothers with eating and moving during and after pregnancy: An interview study using the COM-B framework. *Health & Social Care In The Community*, doi: 10.1111/hsc.12841

This is the accepted version of the paper.

This version of the publication may differ from the final published version.

Permanent repository link: <https://openaccess.city.ac.uk/id/eprint/23094/>

Link to published version: <http://dx.doi.org/10.1111/hsc.12841>

Copyright and reuse: City Research Online aims to make research outputs of City, University of London available to a wider audience. Copyright and Moral Rights remain with the author(s) and/or copyright holders. URLs from City Research Online may be freely distributed and linked to.

City Research Online:

<http://openaccess.city.ac.uk/>

publications@city.ac.uk

Healthcare professionals' views on supporting young mothers with eating and moving during and after pregnancy: an interview study using the COM-B framework

Grace Lucas, MA (Cantab), MSc, PhD*

Ellinor K. Olander, BPsych, MSc, PhD

Professor Debra Salmon, RN, MA, PhD

Centre for Maternal and Child Health Research, School of Health Sciences, City, University of London, Northampton Square, London EC1V 0HB, UK

*Corresponding author. Centre for Maternal and Child Health Research. School of Health Sciences, City, University of London, Northampton Square, London EC1V 0HB, UK

Tel: +44 020 7040 5729

Email address: grace.lucas@city.ac.uk

Healthcare professionals' views on supporting young mothers with eating and moving during and after pregnancy: an interview study using the COM-B model

Abstract

Young mothers under the age of 20 often have poor nutrition and low levels of physical activity, adversely affecting outcomes for themselves and their babies. The aim of this qualitative study was to explore the experiences of healthcare professionals in supporting young women around eating and moving during and after pregnancy. Seventeen semi-structured interviews were conducted with midwives, family nurse practitioners and health visitors involved in the care of pregnant and post-natal mothers under the age of 20 in England and Wales. Data were analysed using thematic analysis and coded within the theoretical framework of the COM-B model to three areas of capability, motivation and opportunity. For capability, participants were broadly divided between those who had specialist knowledge and training in communication skills to support health behaviours in this population and professionals reliant on tacit knowledge. For opportunity, having enough time was seen as critical because young women's difficult social contexts meant supporting improved health behaviours required relationships of trust to be built. For motivation, participants reported that supporting young women with eating and moving was part of their role. However, the decision to prioritise this support sometimes related to perceived need based on BMI and this was complicated as young women were still growing. Motivation was additionally connected to professionals' own body experiences and health behaviours. Moving habits were less frequently discussed than eating as professionals described how young women tended to walk a lot in their daily lives or found that young women were not interested. Results suggest that to support eating and moving behaviours with young women, professionals need to be trained in communication techniques, enabled with the time to hold space for young women and be able to reflect on their own attitudes and beliefs to support a rounded model of health and wellbeing.

Keywords

Teenage Pregnancy, Diet, Physical Activity, Qualitative Research, Midwifery, Health Visiting, Family Nurse Partnership

What is known about this topic:

- Young mothers under the age of 20 have disproportionately poor health outcomes.
- They are reported to have poor nutrition and low levels of physical activity.
- Understanding how healthcare professionals support women in this domain is essential to improve practice and women's outcomes.

What this paper adds:

- Theoretically-driven (COM-B model) insights suggest a disparity between the provision of specialist support for young women and generic services for larger populations.
- More client-centred approaches that recognise social determinants of health have the potential to engage, empower and create opportunities for health improvement.
- Healthcare professionals may need training to recognise how relationships with their own bodies and understandings of health impact communication with young women.

Introduction

In England and Wales, the under-18 conception rate has decreased by 57% since 1998, although it remains higher than similar western European countries at 17.9 conceptions per thousand women aged 15 to 17 years in 2017 (Office for National Statistics, 2019; Whitworth, Cockerill & Lamb, 2017). Teenage conception rates remain highest in the most deprived areas (Office for National Statistics, 2014) and early pregnancy and parenthood is associated with social disadvantage (Harden et al., 2009). For many of these young women their health, education and economic outcomes are poor (Local Government Association, 2018). Indeed, evidence suggests that having to face the huge changes that occur during adolescence alongside socioeconomic disadvantage might adversely affect health behaviours and health outcomes in the long term (Hackshaw-McGeagh et al, 2017; Viner et al, 2012). For young mothers, this also has implications for the outcomes of their children.

Pregnancy and the postpartum period are likely to offer opportunities for healthcare professionals to support young women engage in health behaviours to help improve outcomes for both themselves and their babies (Olander et al., 2016). In recent years, there has been increasing emphasis on using this time in women's lives to intervene specifically regarding healthy eating and physical activity (The National Institute for Health and Care Excellence, 2010a). This is particularly important for young women given evidence of poor nutrition (Hall Moran, 2007) and adverse outcomes including low birth weight and pre-term birth for their babies (Baker et al., 2009) as well as risks associated with maternal obesity in pregnant teenagers including pre-eclampsia and caesarean delivery (Kansu-Celik et al., 2017). Whilst some young women do improve their diet in pregnancy (Soltani, 2017), others have cited barriers to healthy eating, including a lack of money and access to food (Whisner, Bruening & O'Brien, 2016). Although the issue of physical inactivity is not only contained to young women, studies confirm that both pregnant (Steinl et al., 2018) and postpartum young women

(Behrens, Bradley & Kirby, 2012) are insufficiently physically active. Indeed, teenage girls are consistently identified as a group that is not doing enough physical activity to meet recommendations for health (Women in Sport, 2016).

Due to the unique social and medical context of young motherhood, in the UK, healthcare professionals are offered specific guidelines when working with ‘pregnant women with complex social factors’ including women under the age of 20 (The National Institute for Health and Care Excellence, 2010b). However, given the complexities of young mother’s lives including housing, financial, education and relationship concerns alongside their changing bodies as adolescents – how healthcare professionals address eating and moving both during and after pregnancy may be very different to working with older mothers. The aim of this study was to thus explore the views and experiences of healthcare professionals in providing this support. The broad words eating and moving were used to allow participants to direct towards what they felt were the most resonant issues in these areas. This was to align with a second qualitative study we were also conducting with young mothers themselves, where the research team in consultation with a group of young mothers, decided to avoid words where participants may infer a particular meaning i.e. diet as weight loss. In order to conceptualise behaviours, the framework underpinning this study is the COM-B model (Michie et al., 2011) (see figure 1). The model proposes that for someone to do a behaviour (B – in this case supporting young women with appropriate eating and moving) they need to have the physical and psychological capability (C), the social and physical opportunity (O) and the reflective motivation (evaluation and planning) (M) or automatic motivation (emotions, impulses). The COM-B model has been previously used in qualitative research to explore healthcare professionals’ behaviours in practice (Alexander, Brijnath & Mazza, 2014; Barker, Atkins & de Lusignan, 2016).

Methods

Context

In England and Wales, young mothers are defined as those who become pregnant under the age of 20 (Public Health England, 2016). Their access to healthcare, community and social services varies regionally as does the prevalence of teenage pregnancy (classified as conceptions under the age of 18) (Office for National Statistics, 2017). Whilst all women have access to a midwife (whose role is to provide the first and main contact for a woman during her pregnancy, throughout labour and the early postnatal period) (Royal College of Midwives, 2018), some young women may be offered a specialist teenage – or young parent – midwife (focused on specific issues of younger mothers, offering a more bespoke service). Since 2007, in some areas of England, first time young mothers may be eligible for the support of a family nurse. Family nurses are experienced, qualified nurses who undergo additional training to work with young parents from early on in pregnancy through the first two years of their child's life (Family Nurse Partnership, 2018). They usually carry a maximum caseload of 25 clients. This is an intensive service, where young families are visited on a frequent basis, to provide an individualised programme. Other women see a health visitor from towards the end of their pregnancy until the child is five via a process of core contacts. A health visitor is a registered nurse with additional training in community public health and supports families with children age 0-5 years (Institute of Health Visiting, 2018). Further support for young mothers is provided by the voluntary sector.

Design

This qualitative study using purposive sampling of healthcare professionals working with young pre and post-natal women was conducted between January to June 2018 and involved semi-structured interviews, developed around the COM-B model. A qualitative approach was deemed appropriate as we sought to explore the experiences of those who worked with young

women during or after pregnancy. The consolidated criteria for reporting qualitative research (COREQ) checklist guided the reporting of this study (Tong, Sainsbury & Craig, 2007).

Participants

Following ethical approval, information advertising the study was communicated via emails sent out via existing professional networks and email groups with an interest in teenage pregnancy, and via university and professional body social media channels (Twitter). This initial information comprised a brief outline of the study and contact details of the researcher. It explained that to be eligible for the study, participants had to have recent experience (in the last 12 months) of working with young women under the age of 20 during or after pregnancy. Professionals who expressed an interest in the study and who contacted the researcher were sent a participant information sheet by email. After a minimum of 48 hours, the study researcher [author 1] followed up to answer questions, confirm eligibility, provide further information or arrange a date for the interview to take place. The main reason given for non-participation was capacity issues at work. Consent was received either via email or post on a written form in advance of the interview, or verbally audio recorded at the start of the interviews. Initially, eleven midwives and family nurses volunteered to take part in the study. Whilst it was estimated that data saturation (no new themes, findings, concepts or problems in the data) would be reached by around 12 interviews (Guest, Bunce & Johnson 2006), it was identified that no health visitors had contacted the research team, and so a second recruitment drive was initiated through an email and social media advert sent out via health visiting professional networks. Following the same process, professionals contacted the researcher for more information. After six health visitors consented to take part and were interviewed, the research team cross examined responses to key questions within the schedule and agreed that data saturation had been reached and a geographical spread across England

and including Wales had been achieved. The total number of healthcare professional participants was seventeen.

Qualitative interviews

One female research fellow [author 1] with extensive experience in conducting qualitative research conducted all the interviews between January and June 2018. Participants were not known to the interviewer before the commencement of the study. [Author 1] explained to the participants that she was not a healthcare professional but a researcher interested in an exploratory study about eating and moving during and after adolescent pregnancy.

Participants were offered either telephone or face to face one-off interviews (if within the Greater London region – near to the researcher). Fourteen interviews were conducted over the phone. The researcher was in a private room when conducting the telephone interviews and most participants also chose to take part in a quiet space away from non-participants. Three interviews were conducted face to face in a private meeting room at their workplace. At the start of the interview, the researcher asked participants to explain their role. Participants were then asked about their understanding of eating and moving in relation to young mothers. Interviews were then semi-structured following a topic guide around three areas of capability, motivation and opportunity. Follow up, open-ended questions were used to allow participants to reflect further on their answers. Interviews lasted between 20 and 37 minutes and were audio recorded and transcribed verbatim by a professional transcription company.

Data analysis

De-identified transcripts were coded using Nvivo 11 software and analysed using Thematic Analysis (Braun & Clarke, 2006). The first part of the process involved checking back the transcripts against the original recordings and repeated reading of the transcripts to ensure familiarisation. At the outset of the analysis, [author 1] coded, via a deductive approach, into three components of capability (psychological and physical), motivation (automatic and

reflective) and opportunity (social and physical). [Author 1] began the initial generation of codes and then identified and selected potential themes. Following Braun and Clarke (2006), the collated extracts within each theme were reviewed and checked for 'internal homogeneity' (coherence of the data within themes) and 'external heterogeneity' (clear distinction between themes) (Patton, 1990). The entire data set was then re-reviewed, coding anything initially missed out, and the themes were reworked accordingly. After independent review by all authors (all experienced qualitative researchers), the themes were refined and renamed.

Ethical considerations

Written and verbal information about the study was given to the participant and consent received before interview. Participants were informed that participation was voluntary, that they could withdraw their participation at any time up to the point of data analysis.

Confidentiality was assured, unless relating to a risk of harm. All participants were given an identification number to ensure anonymity. The study was approved by [removed for blinded review] Ethics Committee. No participants withdrew their data.

Findings

Participants

Sixteen participants were female and one was male, aged between 26 and 59. Most participants self-identified as white British. They worked in different regions across England and Wales and represented various professions: Family Nurses (FNP) (n=6), Midwives (n=5), Health visitors (HV) (n=6). Three midwives, with experience in their current role from 18 months to nine years, worked specifically with young women, the other two midwives (with 2 and 5 years' experience in their current roles) had broader midwifery positions but still worked with some young women in their current and previous capacities. FNPs working

exclusively with young women had been in role from between 1 to 10 years. Four health visitors (with 4-16 years' experience) were in generic roles and 2 had a young person focus with experience in their current roles of 1 year and 2.5 years.

Themes

From analysis of the data, themes were identified within each part of the COM-B model (Michie et al., 2011) (see table 1).

Capability

Psychological capability

Own personal knowledge

For some health visitors and midwives, providing support around eating was led by tacit knowledge. When asked about specific training on eating and moving, three midwives reported minimal training in this area. As one midwife (not working in a specialist role) explained, her study was largely 'self-directed' and more about informal knowledge; 'pick[ing] up bits and bobs as you go along' (Midwife 4). This was also reported by a health visitor who explained, in the context of working with young women:

And I always think there is more training we could do, so a lot of it's generalised information that we will give. And a lot of it's down to us to do our own background reading in our sort of specialist area really (HV 1).

Without specific knowledge of how to address eating with young women, two other health visitors said they might avoid discussing eating habits. As one health visitor explained, this was due to a 'lack of knowledge [...] in how to tackle, address [...] it properly' (HV 4).

Specialist knowledge

In contrast, other healthcare professionals reported a confidence in their knowledge around eating and moving. All the FNPs interviewed reported knowledge about 'nutritional food' and a 'balanced diet' within pregnancy for young women (FNP 2). A specialist midwife felt that her knowledge was enhanced through having a teenage specific role, but that 'generic

midwifery' perhaps did not have so much training (Midwife 5). This was echoed by two health visitors who had worked specifically with young women.

Physical capability

Change talk

Participants who were trained in behaviour change techniques reported that they felt confident to communicate with young women around eating and moving. All the FNPs explained how the structured approach to conversations, specifically geared to young families, empowered them with a set of skills:

We've had a lot of training on communication skills, motivational interviewing, change behaviour. And we will set goals with them as well, if they want to set goals, then we'll revisit them at visits as well (FNP 2).

This training meant they could focus on 'change talk' without giving advice (FNP 3). Rather than simply 'giving information' or 'do[ing] health promotion' (FNP 3), FNPs encouraged young women to 'find their own answers' with support (FNP 5). There were also some midwives and health visitors who had been trained in specific techniques to structure their conversations with young women.

Direct talk

For the midwives and health visitors who had not been trained in specific health promotion communication skills training, conversations were based on 'common sense' (Midwife 4) or experience gathered over time. A couple of participants directly challenged young women, who they perceived (because of their age) as uninterested in healthy eating. As one midwife reported, it was best not to 'beat around the bush' and 'be honest' (Midwife 2):

We talk about BMI a lot, these girls don't understand what BMI is. It's just a matter of: "You're overweight, you're healthy, you're obese".
And then they'll just tell you, "What, you mean I'm fat?"
"Yes, if that's how you want to put it."

However, other participants across all three professions expressed some anxiety about discussing weight with young women:

I don't feel like I'm well equipped, I often feel like I'm coming across, being a little bit judgemental, and so yes, I do find it challenging actually (HV 4).

While this issue was not unique to young women, healthcare professionals, felt that such discussions could be 'fuel for the fire' for young women who were often perceived to have low self-confidence (HV 2).

Opportunity

Social opportunity

Obesity Crisis

Across the professions, a few participants reported that social concerns about obesity meant raised awareness of the need to address eating and moving. Healthy lifestyles were now part of conversations midwives had to have with women and this was recorded on their notes (Midwife 3). Specifically, in terms of young women, most professionals reported that young women had unhealthy diets often dominated by fast food and sugary drinks. As a health visitor put it, 'I know that obesity is something that we should all be targeting for the future health of our young parents now' (HV 4). Although, obesity was seen as high profile and an issue facing young women with poor diets, understanding how it should be discussed was less clear.

Physical opportunity

Cuts and privileges

For those healthcare professionals who reported having the 'privilege' (HV 1) or 'luxury' (HV 2) to work for specialist services specifically supporting young women, there were physical opportunities to support young women around healthy habits. This was contrasted with six participants providing general services, whose capacity was often under strain:

Health visitors have 400 and 625. And whilst we may have 25 or 20 vulnerable families they may have 30 or 40 vulnerable families and they're of all different ages. So, it's quite a challenge (FNP 3).

Time and relationships

'Time restrictions and constraints' (HV4) on discussing healthy eating was recognised as an issue for health visitors and midwives, in particular. Young women's lives were described as particularly unstable, especially around housing and relationships, and this was why having time, and the physical opportunity to 'sit with it' rather than just take a quick 'snapshot' (FNP 4) of their lives and habits was so important with this client group.

Deprioritised

In the context of pressure on services leading to a shortage of time, eating and moving were subjects that could become 'bottom of the priority list' (HV1). Indeed, de-prioritisation was discussed by more than half the health visitor participants. One midwife speaking about the profession generally reported that amongst, 'the day to day stuff, like the blood pressure, testing the wee and all of those things', public health issues are sometimes seen as 'fluffy stuff' (Midwife 3). Even when healthcare professionals had specialist roles and more physical opportunity in terms of time, professionals could be faced with 'crisis management' (FNP 1) due to young women's social contexts and eating and moving were not immediate priorities.

Motivation

Reflective motivation

Part of the role

FNPs, midwives and health visitor participants saw health promotion as 'part of the role' (HV 3). For some health visitors, when asked about eating and moving in broad terms, their immediate focus was more on infant health, rather than young women's eating habits. One health visitor explained that while she had found older parents resistant to messages about healthy eating for their children, this seemed to be the way into discussing young women's own habits:

I'm thinking about these two young mums, talking about eating, talking about how they needed to eat, to be strong to look after their child, but thinking that the way that we actually did it, we're talking about healthy eating for the children (HV 6).

Make a difference

Participants across the professions reflected that they thought they needed to discuss healthy eating more with younger women than older mothers. Most of the FNP participants explained they focused on small changes, for example, getting young women to cut consumption of fizzy drinks. There were varying attitudes in terms of whether professionals could support young women in moving habits. Several participants discussed how young women walked everywhere, and, for a few of these participants, this meant they didn't focus so much on discussing other forms of exercise:

So yeah, so the exercise isn't really something that we, I talk about to these mums, I guess they walk a lot (HV 6).

Other healthcare professionals across the professions put less emphasis on to moving because of a perceived lack of interest from young women, 'It's a very rare question I get asked by teenagers about fitness and activity' (Midwife 1) or felt that physical activity was hard for young women because of difficult life contexts. One midwife explained that she wanted young women to take more 'accountability' for their health and reported that some young women were 'lazy' (Midwife 4).

'It depends'

Midwives and some health visitors expressed that their motivation to discuss eating and moving with young mothers was relative to perceived need – 'it depends' (Midwife 4).

Indeed, while for some midwives, discussions depended on an assessment of BMI, others felt that BMI was an unhelpful indicator for young women whose bodies were changing:

I saw a lady yesterday, she does have a raised BMI, but she's stocky rather than fat if that makes sense, and she's still growing. (Midwife 5)

Automatic motivation

‘Own belief system’

Some healthcare professionals’ emotions and understandings about their own bodies and behaviours were related to questions of motivation. Whilst a few health visitors and midwives spoke of their personal interest in healthy eating and nutrition, others felt role modelling was not always possible, as a health visitor explained, when it comes to physical activity, ‘it’s hard to promote something when all you want to do is it yourself, and you don’t’ (HV 1). One midwife reflected that colleagues reported women might compare their own weight to that of healthcare professionals (Midwife 3). This was especially an issue when talking to young women who were said to have lots of ‘body image issues’ (Midwife 3).

‘Hard to fix’

Whilst healthcare professionals did not explicitly state that the complex contexts of young women’s lives affected motivation to discuss eating and moving, several empathetically expressed that there were a number of obstacles that impacted young women’s engagement:

I suppose things like, well there’s the wider and really hard to fix type things [...] And people will say a good diet needn’t be expensive but I think realistically if you’re a fairly inexperienced teenage mother it is hard to do (FNP 5).

A health visitor, who worked with young families in areas of deprivation, reported that she did not ‘really talk much about physical activity’ because it did not feel relevant for her clients (HV 3). If participants had lot of contact with young people, they had emotional insight into just how difficult some of their problems were to address.

Discussion

This study explored, among professionals working with young pregnant and postnatal mothers, key factors influencing their provision of support around eating and moving, which were mapped to each of Michie et al’s (2011) COM-B components. Across both psychological and physical capability there was a broad divide between healthcare professionals who were client centred, trained with specific communication techniques

appropriate for young women and felt capable of supporting health behaviours (such as FNPs) and those who had to rely on tacit knowledge or direct approaches. Whilst the interviews in this study were focused on young women, how to communicate around health behaviours is not an issue limited to this client group. Indeed, midwives' have previously reported uncertainty about effective communication as barriers to their practice (Heselhurst et al, 2013) (Atkinson et al., 2017) leading to avoiding conversations (Christenson et al., 2018).

Whilst obesity concerns were reported to have somewhat elevated the importance of discussing healthy eating and moving with young women, this social opportunity was overshadowed by lack of physical opportunity. Given the turbulence inherent in some young women's lives, relationships of trust with young women needed to be established before work on health behaviours could be prioritised. For some professionals with specialist capacity, time was available, but others were constrained by cuts to services. Reports of disinvestment in services were pronounced throughout the interviews, especially for health visiting, confirming evidence of an impact of austerity measures (British Medical Association, 2018).

At the level of reflective motivation, midwives, FNPs and health visitors felt that supporting young women with eating and moving was part of their public health remit. However, due to time pressures for some health visitor and midwifery participants, this motivation often had to be channelled where most need was perceived and was driven by BMI and some assumptions about the typical behaviours of young people. Automatic motivation related to professionals' own belief systems. First, some participants' understandings of how their own bodies would be viewed affected how they decided to talk to young women. While there is mixed evidence as to whether healthcare professionals need to be role models in terms of health behaviours (While, 2015; Kelly, Wills & Sykes, 2017), our study suggests that critical reflection on how professionals' own behaviours might inform their practice with this client group is needed. Although this study's primary focus was on

eating and moving, weight and shape came up as related constructs throughout the interviews. This is important given young women's particular vulnerabilities including eating disorders (Harrison et al., 2017), stigma and discrimination (Reid et al., 2016), stress (Spicer et al., 2013) and body image concerns (Hodgkinson, Smith & Wittkowski, 2014; Zaltzman, Falcon & Harrison, 2015), which may negatively affect mental health (Birkeland, Thompson & Phares, 2005). Second, even for those professionals with high levels of self-efficacy, behavioural change for young women was also said to be difficult because of the perceived impact of the broader social determinants of health (World Health Organisation, 2018) on young women's lives. This is supported by research that suggests that individually focused interventions cannot mitigate the 'social disparities that precede teen pregnancy' (SmithBattle et al., 2017, p.97) and that cultural change is required (Barker, 2015).

Influences between COM-B model components

Within the COM-B model, there are potential influences between its components. Both capability and opportunity are theorised to impact motivation and enacting behaviour is said to affect capability, motivation and opportunity. In this study, capability influenced motivation. If healthcare professionals were supported with knowledge and communication skills they were more motivated to discuss health behaviours. If professionals had the physical opportunity in terms of time, they reported motivation to discuss eating and moving, which they felt needed time and repeat efforts to change. Although opportunity and capability are not linked in the COM-B model, this study suggests that the pressure of time and cuts on healthcare professionals' roles (physical opportunity) may stifle their capability to provide the optimum support for young women. Previous studies have (in different contexts) identified this influence of opportunity on capability (Russell et al., 2016).

Strengths and limitations

This study has a number of strengths. While similar studies have been conducted about healthcare professional views on nutritional advice for young mothers (Soltani et al., 2017) this study is amongst the first to apply the COM-B model to identify their barriers and facilitators to support young mothers. This is a strength considering the use of theory to understand healthcare professionals' behaviours is under-utilised in perinatal research (Ayers & Olander, 2013). Furthermore, to our knowledge, this is one of the first studies to investigate the views of health visitors in terms of supporting postnatal women with eating and moving.

There are some limitations to this research. Professionals who chose to participate may have an existing interest and motivation around eating and moving with young women. Participants with a general role were concerned that their more limited experience with young women made them less suitable to take part. Questions related to automatic motivation might be harder to answer as automatic behaviours may be unexamined or as professionals don't feel their own bodies are relevant to their professional practice. Interviews with professionals were one-off, relatively short and due to the broad focus on eating and moving both during and after pregnancy across three healthcare professional groups, this may have affected the depth of the data. This study also took place in the specific context of England and Wales. Although this provides some localised perspectives, the themes (such as training and the barrier of time) are supported by wider literature (Sanders, Hunter & Warren, 2016). Another framework that could have been used is the Theoretical Domains Framework (TDF). Although this would have fit closely with the topic, given its origins in evaluating healthcare professional behaviours (Cane, O'Connor & Michie, 2012), we evaluated that the COM-B model would provide a broader model for this exploratory study, which involves a second phase of interviews with young women.

Implications for practice and research

The COM-B model posits that behaviour involves the interaction of capability, opportunity and motivation. Interventions need to change one or more of these elements for behavior change. This study suggests that to support eating and moving behaviours with young women, professionals need to be trained in communication techniques (physical capability), and be able to critically reflect on their own emotions and understandings (automatic motivation) to support a rounded model of health and wellbeing. Addressing these motivating factors in reflective enquiry might improve understanding, confidence and self-efficacy.

Whilst this study did not find consistent differences in the support provided around eating and moving during and after pregnancy, it was reported that, in general services, eating in the postpartum period was more focused around weaning babies. Given the influence of maternal dietary habits on children's eating (Hoffman et al., 2016), the potential shift of focus away from mothers' eating habits may warrant investigation. Findings from this study also suggest that healthcare professionals are more knowledgeable and skilled discussing eating than moving, reflecting some previous research (McParlin et al., 2017). Participants discussed how moving was a part of young women's daily lives already. However, as poverty may undermine young women's ability to access transport meaning walking is a necessity, this may complicate positive ideas of walking as healthy and life-enhancing movement (Bostock, 2001). This contradictory impact may require further reflection and exploration.

For all three groups of healthcare professionals in this study, having to negotiate between weight concerns and young women's vulnerable bodies sometimes proved difficult. Indeed, at the same time as being asked to communicate and guide on weight management (The National Institute for Health and Care Excellence, 2010a) healthcare professionals are also asked to be mindful about body image concerns (Ewers, 2014). The need to broaden understandings of mental health and wellbeing whilst responding to a public health agenda focused on around obesity suggests the need for professional reflection. Furthermore, given

the double stigmatisation of young parenthood and weight bias, this study suggests an increased importance of recognizing this context for health behaviour communication. Interventions that focus on health behaviours and obesity need to include measurements on these broader social determinants of health and wellbeing (Hoare et al., 2015).

Conclusions

Healthcare professionals working with young mothers face complex challenges as they seek to improve health behaviours around eating and moving. More research is needed to evaluate if specific training in communication, reflection on healthcare professionals' own embodied practices and beliefs about health, or access to other professional expertise, can enable them to further support young women, whose vulnerabilities mean that careful contextual communication is required to support a rounded model of health and wellbeing.

References

Alexander, K.E., Brijnath, B. & Mazza, D. (2014). Barriers and enablers to delivery of the Healthy Kids Check: an analysis informed by the Theoretical Domains Framework and COM-B model. *Implementation Science*, **9**, 60. doi:10.1186/1748-5908-9-60

Atkinson, L., French, D.P., Ménage, D. & Olander E.K., (2017). Midwives' experiences of referring obese women to either a community or home-based antenatal weight management service: Implications for service providers and midwifery practice, *Midwifery*, **49**,102–109.

Ayers, S. & Olander, E. (2013). What are we measuring and why? Using theory to guide perinatal research and measurement. *Journal of Reproductive and Infant Psychology*, **31**, 439-448. doi:10.1080/02646838.2013.834041

Baker, P.N., Wheeler, S.J., Sanders, T.A., Thomas, J.E., Hutchinson, C.J., Clarke, K., Poston L. (2009) A prospective study of micronutrient status in adolescent pregnancy. *American Journal of Clinical Nutrition*, **89**,1114–24. doi: 10.3945/ajcn.2008.27097

Barker, F., Atkins, L. & de Lusignan, S. (2016). Applying the COM-B behaviour model and behaviour change wheel to develop an intervention to improve hearing-aid use in adult auditory rehabilitation. *International Journal of Audiology*, **55**, S90-8. doi:10.3109/14992027.2015.1120894

Barker, M. (2015). Developmental origins, behaviour change and the new public health. *Journal of Developmental Origins of Health and Disease*, **6**, 428-433. doi: 10.1017/S2040174415001312

Behrens, T.K., Bradley, J.E., Kirby, J.B. & Nanney, M.S. (2012). Physical activity among postpartum adolescents: a preliminary report. *Perceptual and Motor Skills*, **114**, 310-8. doi: 10.2466/06.10.13.PMS.114.1.310-318

Birkeland, R, Thompson, J.K. & Phares, V. (2005). Adolescent motherhood and postpartum depression. *Journal Of Clinical Child And Adolescent Psychology*, **34**, 292-300. doi: 10.1207/s15374424jccp3402_8

Bostock, L. (2001), Pathways of disadvantage? Walking as a mode of transport among low-income mothers. *Health & Social Care in the Community*, **9**, 11-18. doi:10.1046/j.1365-2524.2001.00275.x

Braun V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, **3**, 77-101. doi: 10.1191/1478088706qp063oa.

British Medical Association. (2018). *Feeling the squeeze: The local impact of cuts to public health budgets in England met the inclusion criteria*. London: BMA.

Cane, J., O'Connor, D., Michie, S. (2012) Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science*, **7**:37. doi:10.1186/1748-5908-7-37

Christenson, A., Johansson, E., Reynisdottir, S., Torgerson, J. & Hemmingsson, E. (2018). Shame and avoidance as barriers in midwives' communication about body weight with pregnant women: A qualitative interview study. *Midwifery*, **63**, 1-7. doi:10.1016/j.midw.2018.04.020

Ewers, H. (2014). *Body image in pregnancy*. London: The Royal College of Midwives. Retrieved from: <https://www.rcm.org.uk/news-views-and-analysis/news/body-image-in-pregnancy>

Family Nurse Partnership. (2018). Retrieved from: <https://fnp.nhs.uk/>

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, **18**, 59-82. doi: 10.1177/1525822X05279903

Hackshaw-McGeagh, L., Jamie, K., Beynon, R., & O'Neill, R. (2018). Health behaviours of young mothers: Implications for health promotion and cancer prevention. *Health Education Journal*, **77**(3), 277–292. doi: 10.1177/0017896917745106

Hall Moran, V. (2007). Nutritional status in pregnant adolescents: a systematic review of biochemical markers. *Maternal and Child Nutrition*, **3**, 74-93. doi:10.1111/j.1740-8709.2007.00081.x

Harden, A., Brunton, G, Fletcher A. & Oakley, A. (2009). Teenage pregnancy and social disadvantage: systematic review integrating controlled trials and qualitative studies. *BMJ*, **339**:b4254. doi:10.1136/bmj.b4254

Harrison, M. E., Balasubramaniam, B., Robinson, A. & Norris, M. L. (2018). Adolescent pregnancy and eating disorders: a minireview and case report. *Eating & Weight Disorders*. **23**, 389-393. doi: 10.1007/s40519-017-0380-2

Heslehurst, N., Russell, S., McCormack, S., Sedgewick, G., Bell, R. & Rankin, J. (2013). Midwives perspectives of their training and education requirements in maternal obesity: a qualitative study. *Midwifery*, **29**, 736-44. doi: 10.1016/j.midw.2012.07.007.

Hoare, E., Fuller-Tyszkiewicz, M., Skouteris, H., Millar, L., Nichols, M. & Allender, S. (2015). Systematic review of mental health and well-being outcomes following community-based obesity prevention interventions among adolescents. *BMJ Open*. **5**, e006586. doi: 10.1136/bmjopen-2014-006586

Hodgkinson, E.L, Smith, D. M. & Wittkowski, A. (2014). Women's experiences of their pregnancy and postpartum body image: a systematic review and meta-synthesis. *BMC Pregnancy and Childbirth*. **14**, 330. doi:10.1186/1471-2393-14-330

Hoffmann, D. A., Marx, J. M., Kiefner-Burmeister, A. & Musher-Eizenman, D. R. (2016). Influence of maternal feeding goals and practices on children's eating behaviors. *Appetite*, **107**, 21-27. doi: 10.1016/j.appet.2016.07.014

Institute of Health Visiting. What is a health visitor? Retrieved from:
<https://ihv.org.uk/families/what-is-a-hv/>

Kansu-Celik, H., Kisa Karakaya, B., Guzel A,I., Tasci, Y.& Erkaya, S. (2017). To evaluate the effect of pre-pregnancy body mass index on maternal and perinatal outcomes among adolescent pregnant women. *The Journal of Maternal-Fetal & Neonatal Medicine*, **30**, 1574-1578. doi:10.1080/14767058.2016.1214122

Kelly, M., Wills, J. & Sykes, S. (2017). Do nurses' personal health behaviours impact on their health promotion practice? A systematic review. *International Journal of Nursing Studies*, **76**, 62-77. doi: 10.1016/j.ijnurstu.2017.08.008.

Local Government Association (2018). *Good progress but more to do. Teenage pregnancy and young parents*. London: May 2018

Michie, S., van Stralen, M. M. & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, **6**, 42. doi:10.1186/1748-5908-6-42

National Institute for Health and Care Excellence (NICE). (2010a). Weight management before, during and after pregnancy. Public health Guideline, 27. Retrieved from: <https://www.nice.org.uk/guidance/ph27>

National Institute for Health and Care Excellence (NICE). (2010b). Pregnancy and complex social factors: a model for service provision for pregnant women with complex social factors. Clinical Guideline 110. Retrieved from: <https://www.nice.org.uk/guidance/cg110>

Office for National Statistics (2014). Teenage conception rates highest in the most deprived areas. Retrieved from: www.ons.gov.uk/ons/rel/regional-trends/area-based-analysis/conceptions-deprivation-analysis-toolkit/conceptions-deprivation-measures--2009-11.html

Office for National Statistics. (2017). Births by Parents' Characteristics, England and Wales, 2016. Retrieved from: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthsbyparentscharacteristicsinenglandandwales/2016>

Office for National Statistics. (2019). Conceptions in England and Wales: 2017. Retrieved from: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/conceptionandfertilityrates/bulletins/conceptionstatistics/2017>

Olander, E.K., Darwin, Z.J., Atkinson, L., Smith, D.M. & Gardner, B. (2016). Beyond the 'teachable moment' - A conceptual analysis of women's perinatal behaviour change. *Women and Birth*, **29**, e67-71. doi:10.1016/j.wombi.2015.11.005.

Patton, M.Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.

Public Health England (PHE). (2016). Teenage mothers and young fathers: support framework. Retrieved from: <https://www.gov.uk/government/publications/teenage-mothers-and-young-fathers-support-framework>.

Reid, A.E., Rosenthal, L., Earnshaw, V.A., Lewis, T.T., Lewis, J.B., Stasko, E.C. Tobin, J.N. & Ickovics, J.R. (2016). Discrimination and excessive weight gain during pregnancy among Black and Latina young women. *Social Science & Medicine*, **156**, 134-141.

Royal College of Midwives. (2018). *Want to be a midwife?* London: RCM. Retrieved from: <https://www.rcm.org.uk/learning-and-career/becoming-a-midwife>

Russell, C. G., Taki, S., Azadi, L., Campbell, K. J., Laws, R., Elliott, R. & Denney-Wilson, E. (2016). A qualitative study of the infant feeding beliefs and behaviours of mothers with low educational attainment, *BMC Pediatrics*. **16**, 69. doi: 10.1186/s12887-016-0601-2

Sanders, J., Hunter. B. & Warren. L. A wall of information? Exploring the public health component of maternity care in England. *Midwifery*, **34**, 253-260. doi: 10.1016/j.midw.2015.10.013.

SmithBattle, L., Loman, D. G., Chantamit-o-pas, C. & Schneider, JK. (2017). An umbrella review of meta-analyses of interventions to improve maternal outcomes for teen mothers. *Journal of Adolescence*, **59**, 97-111, doi:10.1016/j.adolescence.2017.05.022

Soltani, H., Duxbury, A., Rundle, R. & Marvin-Dowle, K. (2017). Dietary habits and supplementation practices of young women during pregnancy: an online cross-sectional survey of young mothers and health care professionals. *BMC Nutrition*, **3**, 19. doi:10.1186/s40795-017-0137-3.

Spicer, J., Werner, E., Zhao, Y., Choi, C. W., Lopez-Pintado, S., Feng, T., Altemus, M, Gyamfi, C. & Monk, C. (2013). Ambulatory assessments of psychological and peripheral stress-markers predict birth outcomes in teen pregnancy. *Journal of Psychosomatic Research*, **75**. doi:10.1016/j.jpsychores.2013.07.001

Steinl, G.K., Whisner, C.M., Pressman, E.K., Cooper, E.M., Groth, S.W. & O'Brien, K.O. (2018). Patterns and correlates of self-reported physical activity in a cohort of racially diverse pregnant adolescents. *Journal of Pediatric and Adolescent Gynecology*, **32**(1), 51-56 doi: 10.1016/j.jpag.2018.09.003

Tong, A., Sainsbury, P. & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, **19**, 349–357. doi:10.1093/intqhc/mzm042

Viner, R.M., Ozer, E.M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., Currie, C. (2012) Adolescence and the social determinants of health. *Lancet*. Apr 28, 379(9826), 1641-52. doi: 10.1016/S0140-6736(12)60149-4.

While, A.E. (2015) Promoting healthy behaviours – do we need to practice what we preach?, *London Journal of Primary Care*, **7**, 112-114. doi: 10.1080/17571472.2015.1113716

Whisner, C.M., Bruening, M. & O'Brien, KO. (2016). A Brief Survey of Dietary Beliefs and Behaviors of Pregnant Adolescents. *Journal Of Pediatric And Adolescent Gynecology*, **29**, 476-481. doi: 10.1016/j.jpag.2016.03.002

Whitworth, M., Cockerill, R. & Lamb, H. (2017). Antenatal management of teenage pregnancy. *Obstetrics, Gynaecology & Reproductive Medicine*, **27**, 50-56. doi: 10.1016/j.ogrm.2016.11.005

Women In Sport, (2016) *Girls Strategy 2016-9*. Retrieved from: <http://www.womeninsport.org/wp-content/uploads/2017/03/Ambitions-for-Girls-2016-Strategy.pdf?x99836>

World Health Organisation (2018). Social determinants of health. Retrieved from: http://www.who.int/social_determinants/sdh_definition/en/

Zaltzman, A., Falcon, B. & Harrison, M. E. (2015). Body image in adolescent pregnancy.
Journal of Pediatric and Adolescent Gynecology, **28**, 102-8. doi: 10.1016/j.jpag.2014.06.003

Table 1. COM-B model and related themes

COM-B components (Michie et al, 2011)		COM-B components applied to HCPs supporting eating and moving	Themes from this study	Illustrative quotes
Capability: the individual's 'capacity to engage in the activity concerned'	Psychological capability: 'the capacity to engage in the necessary thought processes i.e. comprehension, reasoning <i>et al.</i> '	Healthcare professionals' knowledge about eating and moving related issues	Own personal knowledge	'It's my own knowledge, as an adult and with children myself, I think if we spoke to most of the general public and said "What do you think is a healthy diet?", I think the majority would say "Some fruits, some vegetables, not too much of the fat." Like I think everyone's basic knowledge of a good diet, but then in your pregnancy it's more what they can and can't eat.' (Midwife1)
			Specialist Knowledge	'So there is specific resources about diet and what's a balanced diet [...] So there is information in the FNP programme about what – it gives a list of nutritional food and what they contain – and how that would benefit the baby, so there is that information' (FNP 2).
	Physical capability: physical skills to enact the behaviour	Healthcare professionals' skills to communicate and support around eating and moving	Change talk	'And then we kind of reflect back to them what they're actually thinking. So, when they actually hear it, you know. And then we actually listen for that that bit of change talk' (FNP 3).
			Direct talk	And I've been round to the houses and seen two litre bottles of cherry coke on the side, and I'm like, "You're not drinking that every! What are you drinking? Are you drinking plenty?" "Yes." "What of?" "Coke." "Oh God". You know, they're typical teenagers in their diet (Midwife 1).
Opportunity: 'the factors that lie outside of the individual that make behaviour possible or prompt it'.	Social opportunity: 'afforded by the cultural milieu' which 'dictates the way we think about things'	Social influences/enablers to healthcare professionals supporting young women with eating and moving	Obesity crisis	'I've heard in the media about falling rates of teenage girls moving. So, I suppose that's a wider context that we are faced with' (FNP 5).
	Physical opportunity: 'afforded by the environment'	How healthcare professionals are enabled or prevented from supporting eating and moving behaviours via their working environment	Cuts and privileges	'We skate on thin ice a lot of the time with, whether we will be able to maintain our role in the cuts' (HV 1).
			Time and relationships	'I think, as a health visitor, I wouldn't even pick up that they had an issue with disordered eating. Because why would I? I wouldn't know what they were eating. I wouldn't be having those conversations' (FNP 4).
			Deprioritised	'I think it's unfortunate at the moment, I don't think it's top priority for everybody anymore, I think unfortunately pressures of staffing have kind of, yeah, I suppose, decreased the importance a little bit really' (HV 2).
Motivation: 'all those brain processes that energize and direct behaviour'.	Reflective motivation: 'analytical decision making', 'reflective processes (involving evaluation and plans)'. Automatic motivation: 'involving emotions and impulses that arise from associative learning and/or innate dispositions'.	How healthcare professionals analyse their motivation to discuss and support eating and moving with young women	Part of the role	'Well that's part of the midwifery role. It's under public health. It's part of that promoting health outcomes, behavioural changes, and promoting public health' (FNP 6).
			Make a difference	'I think when you're older and you're responsible for yourself and also for your family... what you're putting on the table and you're more conscious about what is healthy eating and you're, whereas I think with the young parents or teenagers if you're at home you're more or less given the food you eat... or you are more prone to go and have fast food' (FNP 5).
			It depends	'So for the bigger women I tend to talk about it more than women who have normal BMI I say it in passing. I just say it's important to maintain a healthy balanced diet [...] so it depends'(Midwife 4).
	Automatic motivation: 'involving emotions and impulses that arise from associative learning and/or innate dispositions'.	How professionals are motivated to support health behaviours in relation to their own (perhaps unconscious) emotions or understandings about those behaviours	Own belief system	'In terms of exercise I think healthcare professionals are just as bad as everybody else, they don't do enough exercise. So it's hard to promote something when all you want to do is it yourself, and you don't' (HV 1).
Hard to fix			'I think again for a lot of these young mums [...] it is cheaper to eat less healthy, buy a pizza for a pound or a pound fifty can't you, and a bag of chips and a bag of peas, well forget the peas, and probably no fresh fruit and then something probably greasier, like a sausage roll for lunch, that's probably all you'd eat in a day' (HV 6).	

Figures