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A mixed methods investigation of an online intervention to facilitate student midwives' engagement in effective conversations about weight-related behaviour change with pregnant women

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ABSTRACT

Objective: (1) To identify whether an online training intervention could increase midwifery students' knowledge of behaviour change techniques (BCTs) and intentions to use them in practice. (2) To identify students' views and current experiences of talking to women about weight-related behaviour change.
Design: Mixed methods study involving pre- and post-training assessments, and qualitative interviews with midwifery students.
Setting: Online training course delivered at a University in the North of England, UK.
Participants: Midwifery students in the third year of their undergraduate degree during 2015–2016.
Intervention: Online training focused on equipping students with knowledge of theoretically-informed BCTs, and the skills to use them opportunistically in existing practice settings.
Measurements: Likelihood of discussing obesity with women was assessed via a 12-item, 7-point Likert scale assessing students' attitudes, subjective norms, perceived behavioural control, and intentions. A 14-item checklist was used to assess BCT knowledge whereby students selected recognised BCTs (of 7 correct, 7 false). Students' views and experiences of current practice was explored through in-depth, semi-structured one-on-one interviews with a member of the research team.
Findings: Students' subjective norms, perceived behavioural control, and knowledge of BCTs increased post-training but intention and attitudes did not. Interviews revealed three themes accounting for students experiences and views of behaviour change practice: (1) 'How training fits with current encounters with maternal obesity in midwifery training' (2) 'TEnT PEGS prepares students for practice', and (3) 'Value of tailored training'.
Key conclusions: Online BCT training can improve the midwifery students' confidence, knowledge and beliefs that this is part of their role. They also reported finding the training helpful in better preparing them for this challenging element of their routine practice.
Implications for practice: Online BCT training can be used to prepare undergraduate midwifery students for practice.

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[1] Karen Mann passed away in November 2016 – she was part of this study, agreed to be an author and had seen a full draft of the paper.

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Introduction

Obesity is an increasing public health concern due to the growing number of people affected. The prevalence of obesity among adults has increased year on year internationally, for example in the UK rising from 14.9% to 25.6% between 1993 and 2014 (Public Health England, 2016a). Obesity causes substantial illness burden, increasing the risk of many cancers (Renehan et al., 2008) and disabling conditions such as osteoarthritis, asthma, chronic back pain, type II diabetes and cardiovascular disease (Guh et al., 2009). By 2030 it is estimated that a further 11million UK adults will be obese, contributing up to £2billion per year in health care costs required to treat the associated preventable diseases (Wang et al., 2011). Reducing obesity is therefore a public health priority for the UK government (Department of Health, 2011).

Pre-pregnancy maternal obesity is associated with increased risk of a range of structural fetal abnormalities (Stothard et al., 2009) as well as pre-eclampsia, and obstetric outcomes such as induced labour, emergency caesarean delivery, stillbirth, post-partum haemorrhage, gestational hypertension and macrosomia (Bhattacharya et al., 2007). Maternal obesity also has ongoing risks for children. A meta-analysis showed that children born to women with pregravid obesity are three times more likely to be obese than those born to normal-weight mothers (Yu et al., 2013) and are less likely to be breastfed (Lyons et al., 2018). Compared to individuals without obese parents, adults with two obese parents are 2.5 times more likely to develop metabolic syndrome and three times more likely to suffer angina or myocardial infarction (Han et al., 2015). Sibling comparison studies in the offspring of bariatric surgery patients, which controls for some familial confounding variables (Smith et al., 2009; Kral et al., 2006), indicates these results are not solely products of shared lifestyle factors.

Even for normal weight or overweight women, excessive weight gain in pregnancy brings additional health risks. Although there are no evidence-based guidelines on recommended pregnancy weight gain in the UK (National Institute for Health and Care Excellence, 2010), the US based guidelines (Subcommittee on Nutritional Status and Weight Gain During Pregnancy, 1990), and more recently updated gestational weight guidance (Institute of Medicine, 2009), are frequently used to estimate optimum pregnancy weight gain.

Gestational weight gain (GWG) above American guidelines (Subcommittee on Nutritional Status and Weight Gain During Pregnancy, 1990; Institute of Medicine, 2009) increases the risk of caesarean delivery and macrosomia (Asvanarunat, 2015; Goldstein et al., 2017), offspring adiposity all the way into adulthood (Oken et al., 2007, 2010; Schack-Nielsen et al., 2009), and post-partum weight retention (Siega-Riz et al., 2009). Excess GWG is often carried into future pregnancies (Greene et al., 1988; Maddah and Nikooyeh, 2009; Gunderson et al., 2009), exacerbating the problems associated with maternal obesity described above and exposing the mother and future children to increased risk of personal health problems.

There are important economic arguments why interventions are needed to manage weight needs of pregnant women. The costs of providing pregnancy and obstetric care are 23% higher for overweight women and 37% higher for obese women than for women with normal Body Mass Index (BMI, Morgan et al., 2014). In the UK, this is in the context of obesity contributing to annual costs to the overall economy of £27billion, including £6.1billion in National Health Service (NHS) costs (Public Health England, 2015). Interventions which assist overweight and obese women to achieve a normal BMI, therefore reducing healthcare use to that of normal-weight women are cost-effective at less than £1171.34 per person (Morgan et al., 2014).

Obesity can be reduced through lifestyle changes and adoption of healthy behaviours such as increased physical activity and reduced intake of calorific and fatty foods (Hill and Peters, 1998). Cochrane reviews have shown that healthcare professionals use diet and exercise behaviour interventions to support women to lose weight after pregnancy (Amorim et al, 2013), and prevent excessive weight gain in pregnant women (Muktabhant et al., 2015), but not during pregnancy (Furber et al., 2013). Pregnancy presents a series of 'teachable moments', events or circumstances, which create salient health concerns with links to health behaviours. Women are motivated to change behaviour for the benefit of their baby's health, and benefits from regular presence of health care professionals (Phelan, 2010; Cohen et al., 2011).

Health care professionals understand the importance of GWG and obesity and are motivated to address the issues in consultation, yet find it uncomfortable to discuss health-related behaviour change with patients (Chisholm et al., 2012a; Heslehurst et al., 2014). A meta-synthesis demonstrated that midwives report substantial problems in discussing lifestyle and behaviour, fearing offending women lest it damage the supportive relationship they were trying to build (Willcox et al., 2012), leading some to avoid the topic altogether (Heslehurst et al., 2013). It is also viewed as a relatively low priority compared to issues such as smoking cessation, with a 'comparative lack of supporting resources' for conversations about obesity (Heslehurst et al., 2014, p. 472). Other healthcare professionals supporting women during pregnancy and postnatal periods also find these discussions challenging and miss opportunities to initiate behaviour change talk (Talbot et al., 2018).

Other obstacles to engaging with women in weight-related conversations include a lack of confidence in how to approach such conversation effectively (Macleod et al., 2012). This is despite numerous clinical recommendations (WHO, 2008; NICE, 2010), professional body recommendations (NMC, 2009, 2015) and initiatives such as Making Every Contact Count [MECC] (NHS Yorkshire and Humber, 2012) advocating that midwives *explicitly* address behaviour change with women. MECC (Public Health England, 2016b) is a Public Health England initiative. Education for midwives on communicating about obesity during childbearing is limited and there are no specific education strategies identified to enhance skills in effective communication with women about their weight, and also helping them to facilitate change. At the university where these authors are based, generic communication skills were taught, followed by face to face role plays acting out scenarios that typically may be encountered during antenatal care. Obesity and its challenges and opportunities for change were not included prior to this intervention being developed.

The Theory of Planned Behaviour (Azjen, 1991) may be a useful approach to understanding why midwives struggle in these conversations. The theory identifies three key predictors of intention, which in turn predict behaviour – in this case engaging in conversations about obesity-related behaviour: (i) attitudes, such as the expectation of negative patient response; (ii) social norms, such as the importance your peers or seniors see in this work; and (iii) perceived behavioural control, i.e. believing you hold regarding the time, confidence and skills you have to do the job effectively. Heslehurst et al. (2014) identified that throughout the literature midwives consistently expressed the need for training to deliver these behaviour change conversations sensitively and effectively.

After finding similar challenges for medical professionals engaging in behaviour change conversations (Chisholm et al., 2012a), a behaviour change communication toolkit was developed that comprises evidence-based behaviour change techniques (Michie et al., 2011, 2013). This toolkit labelled 'TEnT PEGS' (for full details see Chisholm et al., 2013a) has been shown to be feasible and acceptable for medical students, and training in this approach increases their intention to discuss obesity-related behaviour change with patients (Chisholm et al., 2015). The focus of this study is to build upon this work to test if an adapted version of this training package would be similarly helpful for midwife students.

The aim of this study was therefore to evaluate an online TEnT PEGS training package for midwifery students. Specific research questions were:

(1) Can an online teaching package effectively transfer knowledge about behaviour change techniques to midwifery students?