Midwifery 47 (2017) 28–35

Contents lists available at ScienceDirect

Midwifery

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

Influences on the food choices and physical activity behaviours of overweight and obese pregnant women: A qualitative study

Orna A. O'Brien, MSc Nutritionist[a], Karen L. Lindsay, PhD Postdoctural Fellow[a], Mary McCarthy, PhD Professor Business School[b], Aileen F. McGloin, PhD Nutritionist[c], Maria Kennelly, MB, BCh, BAO Registrar in Obstetrics & Gynaecology[a], Helena A. Scully, MSc Nutritionist[a], Fionnuala M. McAuliffe, MD, FRCPI, FRCOG Professor of Obstetrics & Gynaecology[a,*]

[a] UCD Obstetrics and Gynaecology, School of Medicine and Medical Science, University College Dublin, National Maternity Hospital, Dublin, Ireland
[b] Food Business and Development, University College Cork (UCC), Cork, Ireland
[c] School of Public Health, Physiotherapy and Population Science, University College Dublin (UCD), Dublin, Ireland

ARTICLE INFO

Keywords:
Qualitative research
Food preference
Physical activity
Health behavior
Pregnancy
Lifestyle change

ABSTRACT

Objective: to qualitatively explore influences identified by overweight/obese pregnant women on food choices and physical activity (PA) behaviours; to determine the impact of pregnancy on these factors; and to inform development of future lifestyle interventions during pregnancy.
Design: cross-sectional interview study.
Setting: maternity hospital, Ireland.
Participants: pregnant women (n=22), early pregnancy Body Mass Index > 25 kg/m^2
Measures: barriers to and facilitators of healthy eating and PA in overweight/obese pregnancy. Interviews were transcribed verbatim and analysed using inductive thematic analysis.
Findings: overweight/obese women perceived the following factors to influence their food choices and PA behaviours: personal (e.g. age, enjoyment, health, aesthetic appearance, and response to fatigue); social (e.g. social support, food modelling, social facilitation and weight bias) and environmental (e.g. food salience and the obesogenic environment). These factors affected PA and food choice trajectories differently according to socio-economic and socio-cultural context.
Conclusion and Implications: personal, social and environmental factors affect food choices and PA behaviours. Pregnancy is a powerful stimulus for positive changes in food choices particularly. This change is driven by desire for healthy pregnancy outcome, and is not intrinsically motivated. Healthy lifestyle interventions should aim to sustain positive changes beyond pregnancy through: empowerment, intrinsic motivation, family-centred approach, and behavioural goals.

Introduction

Food choice and physical activity behaviours are influenced by many factors. These factors may be personal factors such as ideals, or they may be social, contextual or environmental factors (Furst et al., 1991; Edward and Tsouros, 2006). These influencing factors are embedded within the life course and fluctuate across the life course (Devine and Olson, 1991; Devine and Olson, 1992; Devine et al., 2000). Pregnancy may be considered a life event which can alter the trajectory of food choices and physical activity behaviours (Bassett-Gunter et al., 2013).

The antenatal period represents an optimal time for lifestyle intervention because pregnant women have regular contact with health care professionals, and are often motivated to make health behavioural changes that may optimise the outcome of their pregnancy (Inskip et al., 2009; Ruggiero et al., 2000; Anderson, 2001). This potential window for lifestyle change is particularly important for overweight (body mass index (BMI)≥25 kg/m^2) and obese (BMI≥30 kg/m^2) pregnant women, who account for approximately 50% of all pregnancies in Western countries (National Maternity Hospital (NMH), 2011; Health and Social Care Information Centre, 2015; McKeating et al., 2015;

* Correspondence to: UCD Obstetrics & Gynaecology, School of Medicine and Medical Science, University College Dublin, National Maternity Hospital, 65–66 Lower Mount Street, Dublin 2, Ireland.
E-mail address: fionnuala.mcauliffe@ucd.ie (F.M. McAuliffe).

http://dx.doi.org/10.1016/j.midw.2017.02.003

Branum et al., 2016). Research indicates that this obstetric group is at significantly higher risk of adverse pregnancy outcomes compared to normal-weight women. These adverse outcomes include hypertension and gestational diabetes (GDM) for the mother (O'Brien et al., 2003; Frederick et al., 2006; Arendas et al., 2008) and birth injury and risk of childhood and adulthood obesity for the baby (Guihard-Costa et al., 2004; Weisman et al., 2010; Gardiner et al., 2011; Adamo et al., 2012). Maternal obesity also incurs a greater financial cost for obstetric care (Department of Health (UK), 2013; Safefood, 2012). Furthermore, it has been found that pregnant women typically have poor compliance with dietary and physical activity guidelines during pregnancy (McGowan and McAuliffe, 2013; Siega-Riz et al., 2002) and often exceed gestational weight gain recommendations (Walsh et al., 2012).

To change the health behaviours of women of childbearing age, it is important to gain a comprehensive understanding of these influencing factors on physical activity and food choice trajectory within the life course, and particularly throughout pregnancy (Devine and Olson, 1991; Devine and Olson, 1992; Devine et al., 2000). Identification of the factors that influence overweight and obese pregnant women may assist in developing more targeted lifestyle interventions during pregnancy, which may lead to greater acceptability of and compliance with lifestyle interventions during pregnancy. To date, there have been several qualitative studies examining the factors that overweight and obese women perceive to influence their food choices and physical activity behaviours during pregnancy (Weir et al., 2010; Heery et al., 2013; Sui et al., 2013a, 2013b; Padmanabhan et al., 2015; Atkinson et al., 2016; Bianchi et al., 2016; Jelsma et al., 2016). However, much of this research focuses on exploring the event of pregnancy itself, with little emphasis placed on the role of historical context - past events and experiences - which may have shaped the beliefs and attitudes of these women before they even approach the life event that is pregnancy.

The primary aim of the current study was to qualitatively explore the various factors within the life course, both past and present, that overweight and obese pregnant women perceive to influence their food choice and physical activity behaviours. The study also endeavoured to inform the development of future lifestyle interventions during pregnancy.

Methods

Ethical Approval

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human participants were approved by the X Ethics Committee. Written informed consent was obtained from all participants upon recruitment.

Theoretical Framework

A cross-sectional interview study was conducted according to the recommendations of the consolidated criteria for reporting qualitative research (COREQ) (Tong et al., 2007). The study explored factors that overweight and obese pregnant women perceived to influence their food choices and physical activity behaviours. The theoretical framework of the study was grounded in the Food Choice Process Model (Furst et al., 2006) and the Social Ecological Model of the Determinants of Physical Activity (Edward and Tsouros, 2006). The Food Choice Process Model categorises influences as ideals, personal factors, resources, social factors and contexts. The Social Ecological Model of the Determinants of Physical Activity illustrates how, in order to impact physical activity in the modern societal structure, a multitude of factors need to be addressed. It is therefore important to maximise the effectiveness of lifestyle interventions taking place during pregnancy by determining what factors this population group perceive to facilitate or hinder healthier lifestyle choices. These influences can affect people's behaviour indirectly by acting as barriers or enablers to motivation (Lent et al., 2000). This study employed inductive thematic analysis methodology to explore these influences, which future interventions promoting healthy eating and physical activity in pregnancy may incorporate as an evidence-based framework.

Participant Selection

The interview component of the study comprised of twenty-two women who were purposively sampled from the outpatient department in the X. Inclusion criteria stipulated that the women must be aged between 18 and 45 years, have a singleton pregnancy, have an early pregnancy BMI ranging between 25.0 kg/m^2 and 39.9 kg/m^2, and have no history of diabetes or other relevant medical disorders. Purposive sampling (Murray, 1999) was used to ensure equal representation of parity and educational attainment. Educational attainment was categorised into the highest level of completed education – either completion of secondary school only or completion of higher levels of education. Equal representation of parity was considered important because published studies in this area indicate that parity influences women's food choices and physical activity behaviours (Olson, 2005), the central theme of the current study. Educational attainment is a known indicator of socio-economic group (Galobardes et al., 2006). Several published studies suggest that women with lower educational attainment tend to have poorer health behaviours than their non-disadvantaged counterparts (McCartney et al., 2013). Therefore, it was deemed prudent to include participants of various parity and educational attainment in order to capture the views from women across different life stages and socio-economic strata, which may influence food choices and physical activity behaviours.

Eligible women were approached in person at their 28-week antenatal appointment, and the purpose and methods of the interview were explained. Recruitment occurred between July 2013 and January 2014, allowing for a staged interview process that accommodated all participants being interviewed at approximately the same point of their pregnancy. Women who agreed partook in a face-to-face interview at 34 weeks' gestation. Recruitment ceased when no new relevant information was acquired from the interviews which indicated that data saturation was reached (Strauss and Corbin, 1990). Participants were not offered financial incentives to participate in the study.

Setting

The study took place at the X, Ireland. The interviews were conducted in a meeting room in the maternity hospital during the 34^{th} week of pregnancy.

The Interview

Semi-structured in-depth interviews were co-ordinated by an Irish, nulliparous female research dietitian with interviewing skills and knowledge of maternal nutrition. While incongruity between the interviewer and participants of other backgrounds can sometimes present problems, the selection of a settings-based, informal discussion format, and particularly the familiarity of the interviewer, who was engaged with the women from the time of initial recruitment, appeared to overcome any such issues. Several steps were taken to minimise social desirability bias. For example, participants were assured by the interviewer at the opening of the interview that their responses would have no impact on their antenatal care or treatment by the research team; the pressure of social desirability bias was highlighted by the interviewer and participants were encouraged to provide an honest account of their experience rather than what they thought the interviewer wanted to hear; and leading questions were avoided. No other persons were present during the interviews.

Each interview followed a qualitative topic list (see Supplementary Material) based on a range of *a priori* themes: