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#### **ORIGINAL RESEARCH – QUANTITATIVE**

# Australian midwives and provision of nutrition education during pregnancy: A cross sectional survey of nutrition knowledge, attitudes, and confidence

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#### ABSTRACT

*Background:* Maternal nutrition during pregnancy affects the health of the mother and the baby. Midwives are ideally placed to provide nutrition education to pregnant women. There is limited published research evidence of Australian midwives' nutrition knowledge, attitudes and confidence. *Aim:* To investigate Australian midwives' nutrition knowledge, attitudes and confidence in providing nutrition education during pregnancy.

*Methods:* Members of the Australian College of Midwives (*n* = 4770) were sent an invitation email to participate in a web-based survey, followed by two reminders.

*Findings*: The completion rate was 6.9% (329 of 4770). The majority (86.6% and 75.7%, respectively) highly rated the importance of nutrition during pregnancy and the significance of their role in nutrition education. Midwives' nutrition knowledge was inadequate in several areas such as weight gain, dairy serves and iodine requirements (73.3%, 73.2% and 79.9% incorrect responses, respectively). The level of confidence in discussing general and specific nutrition issues ranged mostly from moderate to low. The majority of the midwives (93%) provided nutrition advice to pregnant women. This advice was mostly described as 'general' and focused on general nutrition topics. Only half of the midwives reported receiving nutrition education during midwifery education (51.1%) or after registration (54.1%).

*Conclusion:* Australian midwives' attitudes towards nutrition during pregnancy and their role in educating pregnant women about it were positive but their knowledge and confidence did not align with these attitudes. This could be due to minimal nutrition education during midwifery education or during practice. Continued education to improve midwives' nutrition knowledge and confidence is essential. © 2016 Australian College of Midwives. Published by Elsevier Ltd. All rights reserved.

#### Summary of Relevance:

#### **Problem or Issue**

 Poor prenatal nutrition is linked to negative short and long maternal and foetal outcomes. Pregnant women do not meet dietary recommendations and may not receive effective nutrition education. Australian midwives are well positioned to provide nutrition education to pregnant women but their knowledge of nutrition and confidence to provide nutrition education have not been reported.

#### What is Already Known

• International research has reported positive attitudes of midwives towards nutrition during pregnancy but limited knowledge, confidence and nutrition education.

#### What this Paper Adds

• Evidence that Australian midwives have positive attitudes towards nutrition during pregnancy but inadequate nutrition knowledge and variable confidence, possibly due to not receiving nutrition education themselves, either before or after registration.

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#### 1. Introduction

It is increasingly recognised that maternal nutrition during pregnancy affects the health of the mother and the baby. Suboptimal nutrition during pregnancy has been linked to excess gestational weight gain.<sup>1</sup> Excess gestational weight gain and maternal obesity are associated with a greater risk of adverse maternal and foetal outcomes such as gestational diabetes, gestational hypertension, preeclampsia, caesarean delivery, high retention of postpartum weight, depression, low rates of breastfeeding, still births and perinatal deaths, birth defects, neonatal care admission, and macrosomia in addition to increased risk of developing childhood obesity and chronic diseases later in life.<sup>2–4</sup>

The most recent national Australian data reported that the majority of Australian women do not meet Australian dietary recommendations despite perceiving their diet to be healthy.<sup>5</sup> Pregnancy has been suggested as an influential "teachable moment" to promote healthy nutrition.<sup>6</sup> Pregnant women usually have contact with health care providers, and they tend to be more interested in, and actively seeking nutrition information.<sup>7</sup> However, a recent review identified that limited nutrition education is often provided to pregnant women within antenatal care settings in developed countries (including Australia), despite health care providers (including midwives) acknowledging its importance.<sup>8</sup> Inadequate time, resources and education were identified by health care providers as barriers towards the provision of nutrition education during pregnancy.<sup>8</sup>

In Australia midwives are key providers of primary antenatal care. The Australian College of Midwives' (ACM) philosophy acknowledges midwifery as a women centred profession, which is based on a relationship between women and their midwives, and has the ability to affect the health and wellbeing of the mothers and the society in a positive way.<sup>9</sup> Through the provision of antenatal care, midwives work with women and support them in making informed decisions that can impact positively on their health and the health of their babies.

In the Essential Competencies for Basic Midwifery Practice of the International Confederation of Midwifery (ICM),<sup>10</sup> it is indicated that midwives should have knowledge of maternal and foetal nutritional requirements, and the skills to assess maternal status and provide advice accordingly. The Australian National Competency Standards also indicate that midwives have a public health role that encompasses the promotion of wellness of women, their families and the community, although the case of nutrition is not specifically addressed.<sup>11</sup> This places expectations on midwives to be knowledgeable about nutrition during pregnancy, and to have a role in the provision of nutrition education to pregnant women.

Clinical guidelines for antenatal care in Australia have been set to provide standard guidance for all health care providers involved in the provision of antenatal care (including midwives). The Australian National Antenatal Care Guidelines Module One was published in December 2012,<sup>12</sup> followed by Module Two in 2014.<sup>13</sup> The guidelines cover the provision of nutrition guidance to pregnant women, advice on supplements and the management of nutrition related issues such as nausea and vomiting.

A review investigating the role of midwives in nutrition education in developed countries (including Australia), reported midwives' agreement on the importance of nutrition during pregnancy, and their significant role in educating women about it. However, it also reported that midwives' nutrition knowledge was inadequate.<sup>14</sup> This review highlighted midwives' lack of confidence in discussing some nutrition related issues such as vegetarian diets, diets of women from different religions or backgrounds and diets of women with previous medical conditions such as gestational diabetes.<sup>14</sup> In some Australian qualitative studies, midwives pointed

out they are main providers of nutrition advice, however they lack confidence and communication skills in approaching sensitive topics such as weight management and obesity.<sup>15,16</sup>

Currently there are limited published quantitative data about the nutrition knowledge of Australian midwives, their attitudes towards the importance of nutrition during pregnancy and their views of their role in providing nutrition education to pregnant women, and their confidence in discussing general and specific nutrition related issues. This study aimed to address this gap.

#### 2. Methods

#### 2.1. Design

The design of the research was a cross-sectional study using a web-based survey.

#### 2.2. Research questions

- 1. What are midwives' attitudes towards nutrition during pregnancy and their role in educating pregnant women about nutrition?
- 2. What do Australian midwives know about general nutrition during pregnancy?
- 3. What are the factors associated with midwives' general knowledge of nutrition during pregnancy?
- 4. How confident do midwives feel in providing general and specific nutrition related advice?
- 5. Are dietitians' services available for midwives and do midwives refer to dietitians?

#### 2.3. Sampling and administration

A convenience sample of members of the Australian College of Midwives (ACM) was recruited for this study. Recruitment occurred through placing an invitation with a link to the survey in the ACM newsletter, and an invitation email via the ACM office to its 4770 members in August 2012, followed by two email reminders sent at monthly intervals. The first page of the online survey was an information sheet and consent statement. Respondents implied their consent by accessing and completing the web survey. A sample size calculation was attempted to estimate the minimum number of respondents required to have sufficient statistical power. The estimated minimum sample size required was 356. The calculation was based on a total population of 4770, margin error of 5 and a confidence level of 95%.<sup>17</sup>

#### 2.4. Survey development

The survey used in the study was developed by the researchers based on previous literature<sup>18–20</sup> and the key issues related to nutrition in pregnancy. Two dietitians and two academics (from public health nutrition and midwifery) reviewed the survey. Further consultation with a professional statistician was sought before commencing data collection to confirm the appropriateness of the survey design to achieve the aims of the study. The survey was first piloted with five colleague researchers and then with five practising midwives. Necessary modifications such as adding a few questions, modifying existing ones and reducing ambiguity were undertaken. The survey was created online using Survey Monkey Software (SurveyMonkeyInc., Palo Alto, California, USA, www.surveymonkey. com).

#### 2.5. Survey structure

The survey included four main sections:

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