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ORIGINAL RESEARCH – QUANTITATIVE

The evaluation of an oral health education program for midwives in Australia



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ARTICLE INFO

Article history:

Received 6 March 2015

Received in revised form 29 September 2015

Accepted 8 October 2015

Keywords:

Oral health

Pregnancy

Education program

Midwives

Antenatal care providers

ABSTRACT

Background: Antenatal care providers are now recommended to promote oral health during pregnancy and provide dental referrals. However, midwives in Australia are not trained to undertake this role. To address this shortcoming, an online evidence based midwifery initiated oral health (MIOH) education program was systematically developed as a professional development activity.

Aim: This study aimed to evaluate the effectiveness of the program in improving the oral health knowledge of midwives and assess their confidence to promote maternal oral health post training.

Methods: The program was evaluated using a pre–post test design involving 50 midwives purposively recruited from two states in Australia. The pre–post questionnaire contained 24 knowledge items previously pilot tested as well as items exploring confidence in promoting oral health and perceptions of the program.

Findings: The results showed a significant improvement in the oral health knowledge ($\uparrow 21.5\%$, $p < 0.001$) of midwives after completion of the program. The greatest improvement in knowledge occurred in key areas vital in promoting maternal oral health namely the high prevalence of dental problems and its impact on birth and infant outcomes. The majority also reported being confident in introducing oral health into antenatal care (82%) and referring women to dental services (77.6%) after undertaking the education program.

Conclusion: The MIOH education program is a useful resource to equip midwives with the necessary knowledge and skills to promote oral health during pregnancy. The program is accessible and acceptable to midwives and can potentially be transferable to other antenatal care providers.

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Introduction

In recent year's considerable emphasis has been placed on oral health promotion during pregnancy and its potential benefits to maternal, infant and pregnancy outcomes.^{1–3} Although there is still debate surrounding the efficacy of periodontal treatment in reducing low birth weight and preterm birth⁴ the consensus is that dental treatment is safe and all pregnant women should receive a dental check early in their pregnancy.⁵ Good maternal oral health can protect a woman's general health and quality of life, plus it will minimise the risk of their infants developing early dental caries through reduced transmission of maternal cariogenic bacteria.^{6,7}

There has also been considerable discussion about the role of antenatal care providers in promoting maternal oral health.^{8–10} The close relationship between antenatal care providers and pregnant women provides a unique opportunity to motivate and change women's oral health practices. As such it is now recommended internationally^{5,11,12} that all antenatal care providers offer oral health education, assessment and referrals to women early in their pregnancy.

Similar policy directions are emerging in Australia. Although in the past there has been limited focus on maternal oral health in Australia² recently new antenatal care guidelines have been developed that advocate all health professionals promote oral health and provide dental referrals for pregnant women.¹³ Midwives are the main providers of antenatal care for Australian women and are in an excellent position to promote oral health. Unfortunately, midwives in Australia face significant barriers in promoting oral health during pregnancy the most relevant being their lack of knowledge and skills in this area.¹⁴ There is also evidence of misconceptions among pregnant women such as believing that poor oral health is a normal and accepted part of pregnancy and that dental treatment can harm the fetus.² These misconceptions and general lack of oral health awareness have contributed to the low rate of dental service utilisation during pregnancy in Australia with only a third of pregnant women consulting a dentist even if they had a problem.^{15–17} To address these issues and adhere to current practice guidelines, an online Midwifery Initiated Oral Health (MIOH) education program was developed to provide midwives with the necessary theoretical and practical knowledge to provide oral health education, screening and referral to pregnant women at their first antenatal appointment.¹⁴ To aid in the screening, the program also showed how to undertake a visual inspection of the oral cavity if required – this component was included in the program as earlier research showed that midwives were open to this idea.⁸ As part of the development process the dental education program along with a screening tool was pilot tested^{18,19} and then further refined and subsequently endorsed by the Australian College of Midwives. The aim of this study is to evaluate the effectiveness of the MIOH education program.

The key research questions are:

- How effective is the MIOH education program in improving the oral health knowledge of midwives?
- How confident are midwives in promoting maternal oral health after completing the education program?

Methods

A pre-post test design was used to evaluate the MIOH education program.

Sampling and participants

The MIOH education program was evaluated using midwives recruited from maternity services in both New South Wales (NSW)

and Victoria (VIC). For inclusion in the study the maternity services had to have a high number of births per year (>2000 births in metropolitan hospital and >1000 births in regional hospitals) and the midwives needed to be involved in the first antenatal booking visit. Maternity services were purposively selected to ensure a range of hospitals and midwives were represented in the sample. Maternity services located in metropolitan and regional hospitals that met the inclusion criteria were identified. In addition, all rural hospitals, community health services and Koori Maternity Services (KMS – a culturally appropriate maternity service for indigenous Australians) were also targeted. Due to limited resources and accessibility for the study investigators in NSW only metropolitan hospitals in this state were sought.

Recruitment

In NSW, three large metropolitan hospitals were selected as they were part of a large multicentre trial being undertaken to improve maternal oral health in the area.²⁰ In Victoria, five hospitals and the Victorian Aboriginal Controlled Community Health Services (representing thirteen KMS) were invited to participate. The managers of the identified maternity or antenatal services were contacted, the MIOH education program explained and the benefits outlined. The relevant midwives were then invited to participate through expressions of interest. Recruitment was undertaken until there was adequate representation of midwives (at least 5) from metropolitan, regional and rural settings in the study sample. The recruitment was conducted for a period of four months.

Data collection

In both States, interested midwives were contacted by the study investigators and provided further information about the study. Participants were then provided a pre-questionnaire (available online and in hard copy) to assess their prior knowledge about perinatal oral health care and collect demographics such as age, highest level of education and total years of practice. The pre-questionnaire contained 24 knowledge items (10 true–false and 14 multiple choice) referred to hereafter as the MIOH Knowledge Test, that were developed from the literature and previously trialled with a small sample of midwives in NSW.¹⁸ On completion of the pre-questionnaire midwives were provided login details to access the online MIOH education program.

The MIOH education program (intervention)

The program contained three self-paced modules focussing on various aspects of perinatal oral health including the oral health screening and referral process as well as a theoretical and practical skill assessment. Program resources were also tailored to the relevant states midwives practiced in. The focus of this MIOH intervention program was to capacity build midwives in oral health education, screening and referral in order to improve the uptake of dental services, oral health knowledge and quality of life of pregnant women.²⁰ Midwives had to pass both the assessments (>80%) to successfully complete the MIOH education program. More detailed information regarding the education program has been reported elsewhere.¹⁴ Midwives were provided a maximum period of three months to complete the program. During this time those who completed the education program were administered post-questionnaires that contained the same 24 MIOH Knowledge Test items as well as additional items exploring midwives' perceptions of the MIOH program and confidence in promoting oral health post training. Midwives who completed the post-questionnaires were then awarded the 16 continuing professional

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