

What do Australian medical programs teach medical students about breastfeeding?

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Abstract

Objectives

To investigate what breastfeeding information is included in Australian medical program curricula and how and by whom it is taught.

Method

The ten Australian medical schools who have graduated students from their current programs were asked to nominate a person to complete an 11-item questionnaire. Data collected from the questionnaire included: if and where breastfeeding is located within the medical program; who teaches medical students about breastfeeding; and other opportunities medical students have to learn about breastfeeding.

Results

The questionnaire was completed and returned by nine of the ten nominated people, giving a response rate of 90 percent. One respondent did not know whether breastfeeding was included in the curriculum. The advantages of breastfeeding, normal breastfeeding management and breastfeeding problems were

taught within the curriculum in the remaining eight programs. All medical programs encouraged contact with breastfeeding mothers and infants although it was not clear whether this included clinical teaching. Teaching about breastfeeding was undertaken by people from a number of different professional areas (e.g. midwives, doctors, lactation consultants) with all schools utilizing a minimum of three professions.

Conclusions

While most Australian medical students received some instruction about breastfeeding, the subject areas taught and the method of teaching varied widely between medical programs. Some students received little formal teaching, with patient contact being the main avenue for gaining breastfeeding knowledge and experience. Others had minimal clinical contact. Ideally breastfeeding should be incorporated into the broader curriculum whenever it is applicable and include both formal teaching and clinical instruction.

Keywords: medical students, breastfeeding, curriculum

Background

Breastfeeding is a major public health issue, with the deaths of an estimated 1.3 million children under five being preventable each year by fully implementing the World Health Organisation (WHO) guidelines for infant feeding (exclusive breastfeeding for six months, and breastfeeding until 2 years of age) (Jones et al. 2003). Increased mortality and morbidity in infants who are not breastfed is also well documented in developed countries (NHMRC 2003, Chen & Rogan 2004) and avoidable hospitalisation costs for infants who are not breastfed are significant (Smith et al. 2002). Additionally, breastfeeding/breast milk production has a substantial economic value, estimated to be around \$A2 billion a year in Australia (Smith & Ingham 2005).

Just like women having a normal birth, breastfeeding is not an illness, and many women breastfeed successfully without any intervention from health professionals. However, women are more likely to initiate breastfeeding and breastfeed for longer if their doctor supports and encourages them to do so (Mansbach et al. 1984, Lu et al. 2001, Young et al. 1998, Counsilman et al. 1983, Li et al. 2004). Additionally, there are situations when women do need advice and help with breastfeeding problems – some of which are specifically related to a medical diagnosis (such as mastitis) and treatment. Dillaway and Douma (2004) found that women expect health care professionals, including doctors, to be proactive in their support of breastfeeding by offering praise and encouragement, asking specific questions about breastfeeding, and giving correct and timely information both in response to questions asked by the mother and when the health professional thinks it is appropriate to do so.

Lactating women and their breastfed infants will be encountered in nearly all fields of medicine, not just in areas perceived to be pertinent such as women's health, paediatrics and general practice. With breastfeeding initiation rates of over 90% in Australia at present (Graham et al. 2005, Blyth et al. 2004, Hegney et al. 2003) and with up to 23% of women breastfeeding at 12 months (Australian Bureau of Statistics 2003) most doctors will encounter breastfeeding women in their day-to-day practice at some stage. Therefore all doctors need at least an understanding of the importance of breastfeeding and how to protect, promote and support it.

Information about breastfeeding learnt as a medical student may be the only knowledge doctors in some speciality areas have to help support and facilitate continued breastfeeding in women they see with other medical problems. For those medical students who continue on to specialise in areas that have a greater vested interest in breastfeeding, a basic grounding in lactation and breastfeeding topics as a medical student will assist them in their ongoing practice and study.

In the USA Newton (1992) found that only 45 percent of 127 obstetric and paediatric departments conducted didactic lectures about breastfeeding for their medical students. Similarly many doctors report that information about breastfeeding management was not included in their medical program or during their vocational or specialty training (Schanler et al. 1999). The majority of doctors surveyed over the last 15 years, mainly in the USA, thought their breastfeeding training was inadequate (Pascoe et al. 2002, Freed et al. 1995a). Apart from a small number of case reports outlining how breastfeeding has been incorporated into specific medical programs (Newton 1992, Ogburn et al. 2005, Lawrence & Lawrence 2005), there are no other published data concerning what and how medical students are taught about breastfeeding.

Breastfeeding knowledge of medical students has been studied infrequently. In Taiwan, Chen (2001) included medical students in his cohort of health professionals and found medical students had poorer breastfeeding knowledge than doctors. However, most other studies, such as those by Freed (1995b) and Taylor (2004) investigating the breastfeeding knowledge of medical professionals, have concentrated on doctors undergoing post-graduate vocational or specialty training, or working as paediatricians, obstetricians or general practitioners. In Australia there is a noticeable lack of data concerning the breastfeeding knowledge of medical students and practicing doctors, and the means by which this knowledge is taught to students during their medical training.

The aim of this study was to investigate what breastfeeding information is included in Australian medical program curricula and how and by whom it is taught. It is part of a larger research project designed to investigate the breastfeeding knowledge and skills of general practice registrars.

Table 1: The Universities surveyed, the type and length of the medical programs and the number of students (including domestic and international).

University	Type of Course	Length of program	Total number of Students in 2005
James Cook University	Undergraduate	6 years	479
University of Queensland	Graduate	4 years	1090
University of Sydney	Graduate	4 years	971
University of Newcastle	Undergraduate	5 years	489
University of Melbourne	Undergraduate	6 years	1541
	Graduate	4.5 years	
Monash University	Undergraduate	5 years	1070
University of Tasmania	Undergraduate	6 years	461
University of Adelaide	Undergraduate	6 years	804
Flinders University	Graduate	4 years	292
University of Western Australia	Undergraduate	6 years	920

Method

Participants

At the time of the study, 10 Australian universities had graduates from their current medical program with another five having students enrolled with anticipated graduation of their first cohort of students between 2007 and 2010. Only the 10 universities with graduates were eligible to participate, as the programs from the other universities were not necessarily finalised. In total, approximately 8117 students were enrolled in these 10 universities in 2005 (Medical Deans Australia and New Zealand 2005) (See Table 1).

Ethics Approval

Ethics approval was obtained from the Behavioural & Social Sciences Ethical Review Committee, University of Queensland (Clearance no 2005000456). Completion and return of the questionnaire was deemed to imply consent.

Materials

An 11-item questionnaire was used to ascertain if and where breastfeeding education was included within the curriculum, who taught the medical students about breastfeeding and the opportunities medical students had to learn about breastfeeding. It was sent to eligible medical schools during December 2005-January 2006.

Procedure

The offices of the Deans of the eligible medical schools were contacted by email to inform them of the study and to ask them to nominate an appropriate person to complete the questionnaire. Follow-up emails were sent after three weeks if a person had not been nominated. Eight of the ten medical schools required a follow-up email. There was no consistency in the position of the person nominated to complete the questionnaire, with the inclusion of representatives from obstetric and paediatric departments and medical education units. A questionnaire, participant information sheet and reply paid envelope were posted to the nominated person at each of the medical schools. Non-responders (five) were followed up by email contact three weeks after the questionnaire was originally distributed, and further contacts (up to four) were made if the questionnaire was not returned.

Results

Completed questionnaires were received from nine of the 10 universities. Information relating to breast milk and/or breastfeeding was specifically included within the curriculum of eight of the nine medical programs. The nominated person from the ninth school did not know if there was specific instruction about breastfeeding, and was only able to answer questions pertaining to the informal or clinical exposure to breastfeeding that students might have.

Teachers

People from a number of different professional areas taught the medical students about lactation and breastfeeding, with most medical schools using people from three professional areas (range 3-5). All eight schools used midwives to teach, with seven also utilizing doctors. Teaching was also undertaken by lactation consultants in five schools, scientists in three schools and nurses and mother support group members in two schools each (see Figure 1).

Subjects Covered

Of the eight medical schools that gave details of the subjects covered, all included aspects of the advantages of breastfeeding, normal breastfeeding management and breastfeeding problems in their curricula. Seven of the eight also covered the physiology of lactation, drugs and breastfeeding and the contraceptive effect of breastfeeding, while five included biochemistry of breast milk and public health aspects. The introduction of solids was mentioned by two schools, however only one school included information regarding weaning – subjects more pertinent to general practitioners than hospital-based doctors (see Figure 2).

Type of Instruction (Formal/Clinical)

Patient contact was the most frequently mentioned teaching format being utilized in all eight programs. How the students were taught varied across specialty areas (see Figure 3). Clinical exposure to breastfeeding with no formal instruction, such as didactic lectures or problem based learning, occurred more frequently during the paediatric term (four out of nine programs). It also occurred in the general practice term in three programs and obstetric term in one program. In contrast, students were exposed both formally and clinically to breastfeeding during the obstetric term in seven programs, while this occurred in only four programs during the paediatric term and two programs during the general practice term. Formal instruction only occurred in the biological sciences area in five programs, but also occurred during the community health, general practice, and obstetric terms in two programs each and in the paediatric term in one program. Breastfeeding instruction was only included in the public health specialty in one program. Students were encouraged to discuss breastfeeding with women in eight of the nine medical programs, while they were encouraged to see women breastfeed in six, and involved in the management of breastfeeding problems in five. The program that did not acknowledge that they encouraged students to discuss breastfeeding with women did encourage involvement in the management of breastfeeding problems.

Figure 1: The frequency of people from different professional areas teaching breastfeeding topics within medical schools

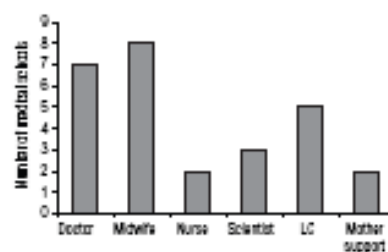


Figure 2: Breastfeeding subjects covered in medical school curricula

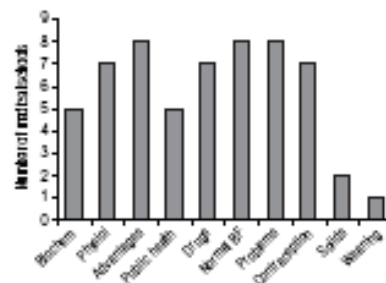
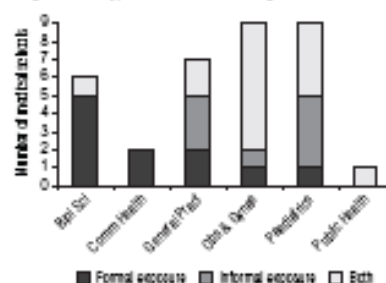


Figure 3: Types of breastfeeding



Discussion

The results of this study indicated that breastfeeding was included in the curricula of at least eight of the 10 medical schools in Australia. Because breastfeeding and lactation are multidisciplinary, multi-specialty and multi-system issues Newton (1992) suggests that the responsibility for lactation education should be spread across the specialties of obstetrics, paediatrics and general practice. Breastfeeding was included in these specialty areas in all medical schools that responded to this survey. As well, six schools included breastfeeding information within the basic biological sciences curriculum, and two schools also included breastfeeding topics within the community health specialty.

People from a variety of professional backgrounds taught medical students about breastfeeding. All medical schools used midwives as teachers, a similar result to a survey conducted in the United States (Harman et al. 1998). However, it would seem that midwives do not always appreciate the need for medical students to have at least a basic knowledge regarding the practical aspects of breastfeeding so that they are able to diagnose and treat complications of breastfeeding such as mastitis and breast abscesses. In an Australian study investigating the attitudes of midwives and midwifery students to medical students' attachment to the labour ward, only 17% and 15% respectively considered that medical students should be involved in providing advice on breastfeeding technique and infant attachment to the breast. In contrast, 71% of medical students felt that this should be part of their clinical attachment (Quinlivan et al. 2003, Quinlivan et al. 2002). However, midwives, with their expertise and experience, could provide valuable information and skills training for medical students.

Five medical schools in this study also used International Board Certified Lactation Consultants (IBCLCs) to provide breastfeeding education. IBCLCs are able to assist mothers with breastfeeding problems throughout the lactation cycle (International Board of Lactation Consultant Examiners, 2005) and thus would provide knowledge and skills about breastfeeding up until the time of weaning. A number of medical schools, including the University of New Mexico in the USA, already encourage medical students to learn breastfeeding skills under the guidance of a lactation consultant (Ogburn et al. 2005).

Lawrence and Lawrence (2005) recommend that doctors, rather than midwives, lactation consultants or lay breastfeeding advocates, should primarily teach medical students about breastfeeding to prevent medical students perceiving 'that understanding and encouraging breastfeeding are not in the physician's job description'. As well, the role and focus of a doctor with breastfeeding women is different from that of other health professions who may teach medical students. Only with medical input can those differences be elucidated and modelled. However, to prevent inconsistent and incorrect information being given to students the doctors involved must have sufficient knowledge and have an interest in the subject (Newton 1992).

There are many advantages to medical programs employing people from a number of professional disciplines, including medicine, to provide breastfeeding education. It ensures that people who are expert in their particular field are teaching the skills and knowledge they know best, emphasises the multidisciplinary and multi-specialty nature of breastfeeding and provides an avenue for medical students to learn about other professions which are able to provide services to their breastfeeding patients.

Subjects such as the advantages of breastfeeding, normal breastfeeding management, breastfeeding problems, physiology of lactation and biochemistry of breast milk were included in the curriculum of most medical schools. Newton (1992) recommends that physiology and anatomy be taught during the preclinical period so that this background knowledge can be the basis for further breastfeeding education during clinical terms. While the specific timing of instruction cannot be ascertained from the survey tool used in this study it would seem that Australian medical students are taught basic information from which they can develop an understanding about normal breastfeeding and breastfeeding problems.

As well as the subjects mentioned above, the Breastfeeding Curriculum Guidelines developed by the Ontario Public Health Association (2004) for incorporation into the undergraduate curricula of all health care professions in Canada, also include modules on breastfeeding as a community issue, and assessment and counselling regarding breastfeeding. It is difficult to ascertain whether medical students in Australia are taught about the community impact of breastfeeding. While the public health effects of breastfeeding were mentioned by four schools as being a subject covered, only one medical school indicated that breastfeeding was included in the public health speciality.

Assessment and counselling about breastfeeding includes the assessment of positioning and attachment of the infant at the breast and of a breastfeed. Patient contact, including seeing women breastfeed and discussing breastfeeding with them, was an important learning avenue in all medical schools that responded. Five schools also encouraged the students to have some involvement in managing women with breastfeeding problems. However, it is unclear whether patient contact or clinical exposure in this context included specific skills training so that the medical students were at least capable of assessing whether the infant was able to attach to and extract milk from the breast. It is often assumed that medical students will acquire many of the skills they need for future practice by clinical experience on the wards (Liddell et al. 2002). However, just seeing patients during clinical terms has, by itself, not been shown to ensure clinical skill proficiency (Remmen et al. 1999) or improved examination performance (McManus et al. 1998). Clinical experience should also include seeing a specific skill used, being instructed in the skill, and performing the skill under supervision. Being able to perform it independently to a satisfactory level would demonstrate competence (Ringsted et al. 2001). Liddell et al. (2002) found that specific skills training before extensive clinical experience improved the competence and confidence of the medical students to undertake these skills. It could therefore be argued that clinical skills training targeted at assessing the effectiveness of a breastfeed, before encountering many breastfeeding women, would encourage students to take an interest in breastfeeding issues and enable them to gain confidence and competence in assessing problems breastfeeding women may encounter.

While seven of the nine schools had both formal and clinical instruction for medical students in the obstetric term, only about half of the schools had a similar combination in the paediatric and general practice terms with the remaining schools reporting clinical experience only. It is, however, questionable whether medical students would gain as much from the experience as they might otherwise if they just saw women breastfeeding during a clinical term without prior or concurrent clinical training or instruction. As would be expected, instruction within the biological sciences area was mainly by didactic lectures.

Limitations

As this is a self-reported survey there are no mechanisms to ascertain whether the information provided is accurate. The nominated person may not have been aware of the breastfeeding teaching conducted within different specialties in the medical school and may not have had an opportunity to discover this. There has also been no attempt to define exactly what is taught and what experiences the medical students encounter when they have informal or clinical exposure to breastfeeding. As well, there is no way of knowing the extent of breastfeeding knowledge acquired by the students.

Recommendations

Medical students need sufficient knowledge to assist breastfeeding women they encounter post-graduation, particularly in relation to medical complications of breastfeeding such as mastitis and breast abscesses, and prescribing medications for lactating women. Education about breastfeeding should be across specialties and integrated into medical programs. Medical students should have an understanding of:

- the effect breastfeeding has on the health of the mother and infant;
- its effect at a community level, including initiatives such as WHO International Code of Marketing of Breast-milk Substitutes, the Ten Steps to Successful Breastfeeding and the Baby Friendly Hospital Initiative, and the NHMRC Dietary Guidelines for Children and Adolescents, and Infant Feeding Guidelines for Health Workers;
- factors influencing the initiation and maintenance of lactation;
- how an infant feeds from the breast – including positioning and attachment of the infant at the breast;
- common breastfeeding problems such as sore nipples, mastitis and breast abscesses;

- the use of medications in breastfeeding women.

Both formal teaching and seeing 'breastfeeding in action' are important. Discussing breastfeeding with women, watching how an infant attaches to the breast and breastfeeds enables a medical student to put theoretical knowledge into context and is more likely to be remembered. Inclusion of questions and discussion about the method of infant feeding and problems encountered should be a normal part of assessing any child or postpartum woman and would lead to the medical students being exposed to a variety of experiences and issues.

When a subject area such as breastfeeding crosses specialty boundaries, there is the possibility of duplication or omission of important points, or conflicting information being given to the students. Providing a mechanism by which a multi-specialty body formulates a breastfeeding curriculum and then integrates it into the broader curriculum whenever it is applicable, with a specific person or department having the responsibility to maintain an overview of what topics are covered and what information is given, would be ideal.

Conclusion

Overall it appears that Australian medical schools include breastfeeding instruction within the curriculum. However, subject areas taught and the method of teaching vary widely and may not provide opportunities for students to develop practical skills. While midwives, lactation consultants and others often play an active role in teaching medical students about breastfeeding it is also important that doctors are involved in developing this knowledge and skills.

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