

# Knowledge and attitudes of secondary school students to breastfeeding

**Dianne Juliff** RN RM MSc(Nursing)

Coordinator Staff Development and Projects

Child and Adolescent Community Health Division, Child and Adolescent Health Service, WA

**Jill Downie** PhD RN RM

Professor of Nursing, Head of School, School of Nursing and Midwifery, Curtin University of Technology, WA

**Pat Rapley** PhD RN

Senior Lecturer, School of Nursing and Midwifery, Curtin University of Technology, WA

## Abstract

Research has indicated that adolescents hold both negative and positive attitudes and have common misconceptions regarding breastfeeding that appear to result from their limited knowledge and reduced exposure to breastfeeding. The purpose of this study was to determine the knowledge and attitudes toward breastfeeding of adolescent rural and metropolitan secondary school students. A survey of a purposeful sample of 1845 male and female students was carried out.

The study results indicated that, overall, Western Australian adolescent secondary school students have less than ideal knowledge of breastfeeding that is consistent with findings from other studies. Female students were found to be more positive towards breastfeeding than male students. The comparison of rural to metropolitan students found that metropolitan students had higher breastfeeding knowledge and were more positive towards breastfeeding than rural students. This study suggests that breastfeeding and lactation information needs to be addressed earlier than adolescence in order to increase breastfeeding knowledge and promote positive attitudes.

### What is already known on this topic

Breastfeeding is under consideration during adolescence; adolescents have mixed perceptions of breastfeeding.

### What this paper adds

Information about current Western Australian adolescent students' knowledge on this topic is outlined in this paper. It reinforces the need for adolescent friendly breastfeeding health promotion and health education to support positive attitudes toward breastfeeding in potential future parents.

## Introduction

Breastfeeding is recognised and widely accepted as the optimal feeding method of infants and young children due to its multiple health benefits for infants, mothers and families<sup>1,2</sup>. It is also an important public health issue, as breastfeeding confers health advantages that persist into later life, has economic benefits and poses no environmental cost<sup>2,3-5</sup>.

The World Health Organization recognises that there is a need to increase exclusive breastfeeding in infants to a minimum of 6 months of age and aims at promoting breastfeeding worldwide<sup>3</sup>. The Australian breastfeeding rates reported by Donath and Amir (2000), following analysis of data from the 1995 National Nutritional Survey, indicated 81.8% of mothers exclusively breastfed on hospital discharge. A further 57.1% of mothers 3 months post discharge exclusively breastfed, with only 18.6% fully breastfeeding at 6 months<sup>6</sup>. In this

study, exclusive breastfeeding was operationalised as the infant only receiving breastmilk with the exception of drops or syrups containing vitamins or medications<sup>6</sup>. The fully breastfed infant, also known as predominantly breastfed, however, may have received unlimited amounts of other liquids such as water and oral rehydration fluids in addition to breastmilk<sup>2,6</sup>. These National Nutrition Survey rates were below the *Health Goals and Targets for Australia's Health in the Year 2000 and Beyond* that aimed to have 50% of infants at 6 months of age being breastfed, with 80% of them being partially breastfed<sup>7</sup>. Adolescent breastfeeding patterns showed decreased incidence<sup>7</sup> and shorter duration of breastfeeding among teenagers<sup>8</sup>.

Previous studies have indicated that positive and negative adolescent perceptions of breastfeeding were reflected in local breastfeeding initiation rates<sup>8-10</sup>. For example, communities in which adolescents regard breastfeeding

positively were associated with higher breastfeeding initiation rates than communities where adolescents lack exposure to breastfeeding role models and were not aware of the benefits of breastfeeding<sup>11-12</sup>. A lack of exposure to breastfeeding throughout childhood and adolescence may influence and contribute to lower breastfeeding initiation and shorter duration rates<sup>12</sup>. It has been revealed that breastfeeding is under consideration during adolescence, and that increased exposure to breastfeeding seems to have a positive influence on subsequent attitudes towards breastfeeding<sup>13-16</sup>.

Adolescent school-age students have previously been studied, both nationally and internationally, to evaluate their knowledge of breastfeeding<sup>10, 12, 14-15, 17</sup>. Previous Australian studies reported that the female students in the higher grades had greater breastfeeding knowledge than male and female students in the lower grades<sup>18, 19</sup>. It has also been revealed that rural students had higher breastfeeding knowledge and were more likely to consider breastfeeding future children than urban students<sup>20</sup>.

The focus of this study was to determine Year 9 and Year 12 rural and metropolitan secondary school students' knowledge and attitudes to breastfeeding. The comparison of breastfeeding knowledge and attitudes between male and female Year 9, and male and female Year 12 students also occurred. The relationship between students' knowledge and attitudes to breastfeeding was also reported.

## Method

The research involved a descriptive cross-sectional design. The study, using both closed and open-ended questions in a questionnaire, allowed for concurrent comparison of male and female, Year 9 and Year 12, rural and metropolitan school students. Permission was sought and obtained from Regina Cusson to use the Breastfeeding Knowledge (BFK) and Attitudes Toward Breastfeeding (ATBF) scales<sup>14</sup>. The reliability for both scales were reported by Cusson to be 0.62 for the BFK scale using the Kuder-Richards formula, and 0.83 for the ATBF scale using the Spearman-Brown Corrected Split Half (odd-even) Index<sup>14</sup>.

The breastfeeding knowledge included the 20-item BFK scale to measure a lay person's basic breastfeeding knowledge via multiple-choice questions. The questions centred around areas such as knowledge about colostrum, breastmilk production and maintenance of milk supply, the advantages of breastfeeding and disadvantages of commercial formulas, breastfeeding mothers' diet, weaning and optimal breastfeeding duration. The knowledge scores were calculated by giving a value of one to each respondent's correct answer, with a possible total knowledge score of 20. For the present study, the content validity of the instrument used by Cusson (1985) was verified by a panel of several breastfeeding experts.

The section on attitudes to breastfeeding utilised the 18-item ATBF scale<sup>14</sup> to measure important facets of adolescent

attitudes. The attitude questions in the questionnaire centred on convenience, skills and emotional and physical aspects of infant feeding. A five-point Likert scale was used to rate responses from 'strongly agree' to 'strongly disagree'.

Demographic questions included participants' age, gender, current year at school, school type and ethnic background. In addition, questions regarding the educational level of the student's mother and father and the parent(s)' occupation type if known were also sought.

## Ethics

This study was conducted in accordance with the National Health and Medical Research Council's National Statement on Ethical Conduct in Research Involving Humans<sup>21</sup>. Ethics approval was granted by the Human Research Committees of the health region and relevant Education Department District Offices, as well as the Ethics Committee of Curtin University.

Written formal consent for the study was obtained from principals in participating schools as the principals are deemed responsible for the duty of care regarding students in the school setting. An information letter regarding the breastfeeding research was placed in each school's newsletter giving parents the opportunity to object to their children participating in the project; these students were not included in the survey.

A student information sheet outlining the purpose and potential benefits of the study and anonymity and confidentiality aspects was given to each participating student prior to completing the questionnaire. Students were informed that they did not have to participate and were free to withdraw from the study with no adverse consequences with information collected destroyed if requested. Completion of the questionnaire by the students was deemed implied consent. Assurance of anonymity and confidentiality were maintained by the use of codes, and the utilisation of an identification number to identify participating schools only.

## Sampling and data collection

The study employed purposive sampling and included males and females in both Year 9 and Year 12 at designated public and private, metropolitan and rural secondary schools. Data collection took place at the end of the second and the beginning of the third secondary school terms in 2001. Community-based high school health nurses located in the participating schools were used to distribute the questionnaires. The nurses also assisted the researcher in identifying the ideal time to conduct the data collection and on how best to inform parents of this project.

Hence, the actual data collection date varied across the participating schools in consideration of each individual school's curricula, such as school sports and camp activities. However, in each school the questionnaires were given out to students on the same day at approximately the same time to enable data collection to occur simultaneously. The intent was to reduce sharing of information and discussions

between students from different classes during change over of classes and at designated student breaks.

Secondary school students who responded to the survey and completed the adolescent knowledge and attitudes to breastfeeding questionnaire numbered 1845 from the 2,331 questionnaires sent out to the selected participants. This represented a 79% response rate from secondary school students who were eligible to participate in the study.

Of the 46,894 Western Australian students in Year 9 and Year 12 in 2001, the participation of 1845 students from Year 9 and Year 12 in this study represented 4% of the school population. There was a relatively even spread of male (900) and female (945) students in the study, with both genders represented in similar proportions for the rural (241 and 259 respectively) and metropolitan study sites (659 and 686 respectively).

Overall, the study sample was predominantly white Caucasian with slightly more females than males, and the majority of students were in Year 9. More students were from metropolitan State government secondary schools that numbered five compared to three rural secondary schools. Respondents' parent occupations were predominantly tradespersons (21%) for fathers and professionals (16.3%) for mothers, with the majority of parents (77.5%) being employed.

#### Data analysis

Analyses of the data were performed using the Statistical Package for Social Science (v10.7). Statistical procedures involved chi-square analysis, Student's independent t-test and univariate analysis of variance. Descriptive statistics were used to analyse the demographic data. The mean and standard deviation were calculated for knowledge and attitude scores. As attitude scores were not normally distributed, the nonparametric Mann-Whitney U and Kruskal-Wallis tests were utilised. A nonparametric Spearman's rho correlation coefficient was used to examine the relationship between respondents' knowledge and attitudes to breastfeeding.

#### Results

Some demographic factors were found to have an influence on the students' breastfeeding knowledge. The mean ranking of students' ethnic background revealed higher knowledge from students with Asian ( $n=231$ , 996.73) and Middle Eastern ( $n=25$ , 978.40) backgrounds; with fathers ( $n=108$ , 1059.63) and/or mothers ( $n=101$ , 1071.81) who have postgraduate qualifications; and parents who are students themselves ( $n=12$ , 1227.25). However, in this study, demographic factors had no influence on the secondary school students' attitudes toward breastfeeding.

#### Knowledge about breastfeeding

With regard to adolescent secondary school students' knowledge, the mean breastfeeding knowledge score in the study was 9.51 out of a possible 20. The five questions that were answered correctly by the majority (over 60%) of the respondents focused on the importance of colostrum,

the proper diet for the breastfeeding mother and whether breastmilk can be produced by all women. Conversely, questions that resulted in a correct response for less than 25% of respondents were the 'let down' reflex, weaning and breastmilk supply. Of those who answered the knowledge questions correctly, most were females (90%) or Year 12 students (75%). Overall, female students had higher breastfeeding knowledge scores than male students (Table 1). In both year groups, the female students had higher breastfeeding knowledge scores than the male students (Table 2). Table 3 revealed that 62.7% of students answered 10 or less questions correctly. Example of knowledge questions asked and the correct response rates according to gender, year and metropolitan rural sites are shown in Table 4.

#### Attitudes toward breastfeeding

Of the students who responded to the attitude questions ( $n=1799$ , 97.5%), at least half of the responses were neutral. That is, responses were neither more or less positive to nine of the 18 questions related to lifestyle, image of breastfeeding and breast versus bottle statements. Overall, female students were more positive in their attitude towards breastfeeding than male students ( $M=2.97$ ,  $SD=0.40$ ,  $z=-7.20$ ,  $p<0.01$ ). Again, female students in both year groups were more positive

Table 1. Mean breastfeeding knowledge scores t-tests by gender.

Gender	n	Mean	(SD)	t	df
Male	900	8.89	(2.99)	-8.56	1843*
Female	945	10.09	(3.05)		

\* $p<0.01$ . Levene's test for Equality of Variances  $>0.05$ .

Table 2. Mean breastfeeding knowledge scores t-tests by gender for Year 9 and Year 12 respondents.

Gender	Year 9		Year 12		t	df
	n	Mean (SD)	n	Mean (SD)		
Male	539	8.37 (2.79)	361	9.65 (3.13)	-6.27	711.33*
Female	544	9.17 (2.74)	401	11.35 (3.01)	-11.47	813.79*

\* $p<0.01$ . Levene's test for Equality of Variances  $<0.05$ .

Table 3. Correct breastfeeding knowledge scores.

Knowledge answers	n	%
5 or less correct	179	9.7
6-10 correct	976	53.0
11-15 correct	655	35.4
16-20 correct	35	1.9
Total	1845	100

towards breastfeeding than male students (Year 9  $M=2.95$ ,  $SD=0.42$ ,  $z=-5.40$ ,  $p<0.01$ ; Year 12  $M=2.99$ ,  $SD=0.36$ ,  $z=-4.72$ ,  $p<0.01$ ). Furthermore, demographic factors and students' attitudes to breastfeeding were not related.

#### Relationship between students' knowledge and attitudes to breastfeeding

The overall knowledge and attitude scores suggested that, the greater the breastfeeding score, the more positive the respondents' attitudes towards breastfeeding ( $r=0.14$ ,  $p<0.001$ ). In addition, Table 5 lists selected breastfeeding related influences on students' breastfeeding knowledge and on their attitude to breastfeeding. These influences include whether they themselves or their siblings were breastfed, and other external influences such as television or classroom exposure to breastfeeding. A negative Z score indicated that the median score for the group who responded 'yes' was higher than for the group who responded 'no'. The Z score is a mean rank score and indicated that knowledge was significantly higher for each group of students who responded positively to the influences of having been breastfed, having siblings who were breastfed, having observed breastfeeding, or had read about breast feeding. With the exception of siblings, these influences were also significant for attitudes to breastfeeding. Attitude to breastfeeding was also influenced by having seen breastfeeding on TV. Classroom breastfeeding discussion did not significantly differentiate on either knowledge or attitude rankings between those who did or did not have the experience.

#### Breastfeeding consideration

Over 60% of male (64.8%,  $n=558$ ) and female (61.3%,  $n=565$ ) students reported that they would consider breastfeeding future children. Seventy-two percent (72.8%) of Year 12 students had considered breastfeeding future children

compared to 56.2% of Year 9 students. In comparison to Year 12 students, more Year 9 students had not really thought about breastfeeding future children, were not sure or chose not to answer the question.

#### Study assumptions and limitations

The study assumptions that students in Year 12 would have more knowledge of breastfeeding and be more positive in their attitudes toward breastfeeding than males and females in Year 9 was demonstrated in this study, as the paper has already described. However, the assumption that rural students would have more breastfeeding knowledge and have more positive attitudes towards breastfeeding than the metropolitan students was not supported by this study.

The generalisability of the study is limited by the nature of the convenience sample. There was also an unavoidable bias in the sample selection process due to the method of invitation to schools to participate. Community-based high school nurses chose to be involved based on the decision of their current workload, nurse staffing levels and ultimately the consent of the school principal for participation. Hence, there is unevenness in the type of school and number of rural and metropolitan students surveyed in the study, with approximately two-thirds of the students being metropolitan.

#### Discussion

This study indicates that students in senior high school have higher breastfeeding knowledge when compared to the students in junior high school. The reason for the higher knowledge scores amongst the older students in the current study is not immediately apparent. However, the results support previous studies which suggest that general life

Table 4. Example of breastfeeding knowledge question with correct response rates.

Breastfeeding knowledge question	Total		Male		Female		Year 9		Year 12		Rural		Metro	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Which of the following substances is contained in breastmilk?	1095	59.3	538	59.8	557	59	531	49	564	74	283	56.6	812	60.3
Which of the following substances is transmitted from mother to baby in breastmilk?	1020	55.3	456	50.6	564	59.6	513	47.3	507	66.5	267	53.4	753	55.9
What is the most important benefit of colostrum?	1110	60.2	502	55.8	608	63.4	573	52.9	537	70.4	263	52.6	847	62.9
In what quantity is breastmilk supplied?	912	49.2	409	45.4	503	53.2	519	47.9	393	51.5	244	48.8	668	49.6
What is the proper diet for the breastfeeding mother?	1457	79	641	71.2	816	86.3	815	75.2	642	84.2	357	71.4	1100	81.7
The let down reflex releases the breastmilk to the suckling baby. This reflex is most affected by?	259	14	141	15.6	118	12.4	166	15.3	93	12.2	83	16.6	176	13

experiences and greater exposure to breastfeeding may explain the higher knowledge scores<sup>18, 19</sup>. Similarly, as with previous studies, female students were found to have higher breastfeeding knowledge scores overall than the male students in the same year<sup>18, 19</sup>. It can be argued that sex-role development is a reason for the higher breastfeeding knowledge in the female students where female adolescents' learn their roles through societal based imitation or observational learning<sup>22</sup>.

The findings of this and previous studies indicate that adolescents as a group hold a mixture of negative and positive attitudes that may influence their future infant feeding choices<sup>18, 20, 23</sup>. The majority of the students in the current study disagree with the idea that 'breastfeeding is healthier for the baby', with approximately half of the respondents disagreeing with the statement 'breastfeeding is more convenient'. This is consistent with other studies where breastfeeding was reported as not convenient<sup>15, 19</sup>.

Neutral responses by the students to half of the attitude questions may indicate that the students are undecided in their attitudes toward breastfeeding. These neutral responses centred on questions related to lifestyle, image of breastfeeding and breast versus formula feeding statements. The value of providing breastfeeding observational learning has been supported previously in the literature where adolescent attitudes to breastfeeding are favourably influenced by media promotion campaigns<sup>9</sup>.

Both the current study and previous research<sup>14, 19</sup> suggest that students in the higher grades are more positive in their attitudes toward breastfeeding than students in the lower grades. Age and maturity may account for the more positive attitudes. Biological and psychosocial maturation may increase self-esteem and acceptance of the adolescent's gender identity and body image<sup>22</sup>.

The findings of the current study support adolescent's acceptance of gender identity which may be a reason for the more positive breastfeeding attitudes in female students.

*Table 5. Summary of significant differences for selected breastfeeding-related influences by breastfeeding knowledge scores (n=1845) & attitudes toward breastfeeding scores (n=1799).*

Breastfeeding influences (Yes/No)	Knowledge Z score	Attitude Z score
Respondents were breastfed	-3.47*	-2.32*
Siblings were breastfed	-5.07**	-1.62
Seen someone breastfeeding	-4.38**	-2.09*
Seen movies on breastfeeding	-1.85	-1.30
Seen breastfeeding on TV	-1.31	-5.16**
Read about breastfeeding	-2.46*	-2.46*
Breastfeeding mentioned in class	-1.50	-1.64

\*p < 0.05    \*\* p < 0.01 Mann-Whitney U test (2-tailed).

The more positive attitudes in female students may also be attributed to the differences in male and female identity formation<sup>25</sup>. Males traditionally focus on vocational and personal identity, whereas females tend to concentrate more on interpersonal relationships<sup>25, 26</sup>. The study results suggest that the influence of verbal persuasion and vicarious experience through social modelling on interpersonal relationships may account for more positive breastfeeding attitudes in female respondents.

Earlier studies support the current findings that the greater the students' breastfeeding knowledge, the more positive their attitudes toward breastfeeding<sup>14, 17-19</sup>. However, the weak positive correlation in this study may be due to the minimal exposure current adolescent students have to breastfeeding women due to the reduction in extended family contact and reduced number of siblings in today's Australian family structure.

The current study reveals students have higher breastfeeding knowledge if their fathers or mothers hold postgraduate qualifications or the parents are participating in formal education themselves. This finding supports previous research findings that mothers with higher education levels were more likely to breastfeed for longer<sup>27</sup>. More highly educated fathers may be better informed and have easier access to information regarding breastfeeding.

The comparison of rural and metropolitan students demonstrates that metropolitan students have higher breastfeeding knowledge and are more positive toward breastfeeding than rural students. Both rural and metropolitan Year 12 female students have higher breastfeeding knowledge and are more positive towards breastfeeding than any other combination of students. The increased knowledge in metropolitan students overall is not consistent with previous research and one explanation could be the increased multimedia and Internet access for all students. Whether this information is portrayed negatively or positively, the gap in breastfeeding knowledge between rural and metropolitan adolescent students continues. Based on the students in the current study, differences between the two groups of students, rural and metropolitan, do exist, which challenges health educators and media to address the imbalance.

Consistent with the literature, the study indicates that the majority of the students intend to have their own children breastfed<sup>10, 13-14, 16</sup>. However, many adolescents have not yet made a firm decision on infant feeding methods<sup>13, 28</sup>. Hence, health promotion and health education emphasising breastfeeding as the optimal nutritional basis is supported for school students, to promote positive breastfeeding attitudes in potential future parents.

## Conclusion

A major implication that can be drawn from the current study is that Western Australian secondary school students have less than ideal knowledge of breastfeeding and unmet information needs; this is consistent with earlier studies in other countries. Hence, more information pertinent to the

health benefits of breastfeeding is needed and should be encouraged in health promotion and nutrition education.

The results of this study and other studies suggest that breastfeeding is under consideration by secondary school students. Therefore, community-based school health nurses, as primary health care providers, are well placed as key health professionals in providing breastfeeding health education and health promotion in the school setting. Although breastfeeding being mentioned in class made no difference to either the students' breastfeeding knowledge or attitudes towards breastfeeding, when using flexible approaches, schools are still recognised as the optimum location for breastfeeding health promotion for adolescents.

Of particular note are the lower breastfeeding knowledge and less positive attitudes of male students. This is particularly relevant with contemporary literature supporting the significant impact men have on their partner's infant feeding methods. Hence, it is imperative for male student inclusion in breastfeeding education. With the lower breastfeeding knowledge scores more prevalent in the lower year group, it also suggests that breastfeeding health promotion be directed toward the younger adolescent student, perhaps even beginning in the primary school setting.

Practice implications for community-based school health nurses, in partnership with teachers and in collaboration with teenagers, is to ensure that student health curriculum needs, such as nutrition, are met via the use of appropriate teenager friendly and acceptable technologies. Further research is warranted for more in-depth exploration of the adolescent's sources of breastfeeding information and effective health promotion techniques that support positive attitudes toward breastfeeding.

## References

- World Health Assembly (2001). *Science defeats baby food industry vested interests at the World Health Assembly*. IBFAN press release 18 May, IBFAN Australia.
- National Health and Medical Research Council (2003). *Dietary Guidelines for Children and Adolescents in Australia*. Canberra: Australian Government Printing Service.
- World Health Organisation (2003). *Global Strategy for Infant and Young Child Feeding*. Geneva: World Health Organisation.
- Department of Health and Family (1996). *Health Throughout Life. Policy Statement, Budget 1996/1997 Initiatives in Public Health*. Commonwealth of Australia.
- Smith J & Ingham L (1997). The economic value of breastfeeding in Australia. *NMMA International Conference Papers*. Sydney, Australia, p200-222.
- Donath S & Amir L (2000). Rates of breastfeeding in Australia by state and socioeconomic status: evidence from the 1995 National Health Survey. *Breastfeeding Review* 8:3, 23-27.
- Nutbeam D, Wise M, Bauman A, Harris E & Leeder S (1993). *Goals and Targets for Australia's Health in the Year 2000 and Beyond*. Canberra. ACT: Government Publishing Service.
- Ineichen B, Pierce M & Lawrenson R (1997). Teenage mothers as breastfeeders: attitudes and behaviour. *Journal of Adolescence* 20, 505-509.
- Friel JK, Hudson NI, Banoub S & Ross A (1989). The effect of a promotional campaign on attitudes of adolescent females towards breastfeeding. *Canadian Journal of Public Health* 80, 195-199.
- Gregg JE (1989). Attitudes of teenagers in Liverpool to breast feeding. *British Medical Journal* 299, 147-149.
- Pascoe J & Berger A (1985). Attitudes of high school girls in Israel and the United States toward breast feeding. *Journal of Adolescent Health Care* 6, 28-30.
- Yeo S, Mulholland PM, Hirayama M & Breck S (1994). Cultural views of breastfeeding among high-school female students in Japan and the United States: a survey. *Journal of Human Lactation* 10:1, 25-30.
- Leffler D (2000). US high school age girls may be receptive to breastfeeding promotion. *Journal of Human Lactation* 16:1, 36-40.
- Cusson RM (1985). Attitudes toward breast-feeding among female high-school students. *Pediatric Nursing* 189-191.
- Purtell M (1994). Teenage girls' attitudes to breastfeeding. *Health Visitor* 67:5, 156-157.
- Greene J, Stewart-Knox B & Wright M (2003). Feeding preferences and attitudes to breastfeeding and its promotion among teenagers in Northern Ireland. *Journal of Human Lactation* 19:1, 57-65.
- Goulet C, Lampron A, Marcil I & Ross L (2003). Attitudes and subjective norms of male and female adolescents toward breastfeeding. *Journal of Human Lactation* 19:4, 402-410.
- Ellis D (1984). Breastfeeding: attitudes and beliefs of an Australian Capital Territory sample of secondary school students. *Breastfeeding Review* 22-26.
- Wolinski M (1989). Adolescent views on breastfeeding: a descriptive survey. *Breastfeeding Review* 9-12.
- Mackay D (1995). Attitudes of schoolchildren to breastfeeding. *New Generation Digest* 11.
- National Health and Medical Research Council. (1999). National standards on ethics conducted in research involving humans. Canberra. ACT: Commonwealth of Australia.
- Slee P T (2002). *Child, Adolescent and Family Development (2nd ed)*. Port Melbourne, Australia: Cambridge University Press.
- Lauwers J & Shinskie D (2000). *Counseling the Nursing Mother. A Lactation Consultant's Guide (3rd ed)*. Sudbury, Massachusetts: Jones and Bartlett.
- Scott JA, Binns CW & Arnold RV (1997). Attitudes toward breastfeeding in Perth, Australia: a qualitative analysis. *Journal of Nutrition Education* 29:5, 244-249.
- Kaplan P (2000). *A Child's Odyssey: Child and Adolescent Development (3rd ed)*. Stamford USA: Wadsworth.
- Erikson E (1968). *Identity: Youth and Crisis*. New York: Norton.
- Scott JA & Binns CW (1999). Factors associated with the initiation and duration of breastfeeding: a review of the literature. *Breastfeeding Review* 7:1, 5-16.
- Greenwood K & Littlejohn P (2002). Breastfeeding intentions and outcomes of adolescent mothers in the Starting Out program. *Breastfeeding Review* 10:3, 19-23.



**Australian College of  
Neonatal Nurses 2008  
3rd Annual Conference**  
  
**Neonatal Care -  
Nurturing Generation Z**  
  
**Sunday 20 April 2008**  
 Holiday Inn, Gold Coast, Queensland

The Annual Conference will discuss the theme **Neurodevelopment and targeted screening and intervention programmes** for preterm & near term infants and will feature keynote presentations by Assoc Professor Joy Browne, Dr Julia Pitcher and Dr Margo Pritchard.

[www.acnn.org.au/conferences.php](http://www.acnn.org.au/conferences.php)

For more information please visit the web page above or contact: NNAQ at [nnaq@acnn.org.au](mailto:nnaq@acnn.org.au)