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The prevalence of behavioural risk factors associated with sudden infant death syndrome

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THE PREVALENCE OF BEHAVIOURAL RISK FACTORS ASSOCIATED WITH SUDDEN INFANT DEATH SYNDROME

by

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USE OF THESIS

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ABSTRACT

Sudden Infant Death syndrome (SIDS) is a major cause of death in the first year of life. In Western Australia (WA), two infants in every thousand live births die from SIDS each year. The aim of this study was to ascertain the prevalence in WA of three risk factors which have been associated with SIDS, namely prone lying, maternal smoking and lack of breast feeding. In addition the study sought to determine the significant influences that encourage change in infant care practices by parents. The study obtained information from child health nurses and midwives regarding the advice they provide on these three risk factors, and the extent to which hospitals have developed policies or guidelines on these risk factors. The information was obtained using mailed questionnaires to five distinct groups (i) 242 mothers who had recently given birth for the first time, (ii) 448 mothers who had recently given birth for at least the second time, (iii) 80 child health nurses (iv) 80 registered midwives plus 13 registered midwives in independent practise, and (v) all 85 hospitals in WA which accepted maternity or infant patients.

This study has found that 89% of infants in WA sleep in a non-prone position, and that mothers with previous children have made a significant change from prone to non-prone sleeping with their most recent child. The rates of commencement of breast feeding (93%) and breast feeding at three months (63%) are comparable to findings elsewhere in Australia. However, there is a significant reduction in the number of mothers who breast fed their recently born infants compared to their previous children. There was an overall small

decrease in maternal smoking between the antenatal and the postnatal periods. Mothers with previous children smoked significantly less after the birth of their recently born infant than after the birth of their previous child. The media, midwives, and books, pamphlets and parenthood classes were important influences for mothers with respect to infant sleeping position. Child health nurses and midwives had changed their advice on sleeping position, with almost all promoting a non-prone infant sleep position. The majority of hospitals have instituted policies and guidelines advocating non-prone infant sleeping. The 'Reducing the Risks' campaign initiated by the SIDS Foundation in 1991 appears to have had an important and significant role in effecting this change in sleeping position.

The results of this study have provided important baseline data about the prevalence of the major postnatal risk factors associated with SIDS, and also include information about the advice given by health care professionals and hospitals. This information has the potential to assist health care personnel and agencies when developing future health promotion strategies in the area of maternal and child health in WA.

DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signature:

Date: 7-6-94

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CHAPTER 1: INTRODUCTION

1.1 Background

Sudden Infant Death Syndrome (SIDS) is recognised as a major cause of infant mortality in infants between one month and one year of age in Western industrialised countries (Dwyer, Ponsonby, Newman, & Gibbons, 1991; Hoffman & Hillman, 1992). International trends during the past two decades have shown increases in the proportions of infants dying from SIDS (Taylor & Emery, 1988). However, during the past five to six years it has been widely reported that these rates have dropped, and it is possible that this is due in part to intervention campaigns, most of which have been aimed at reducing the use of the prone sleeping position for infants (Beal, 1988; Engelberts, de Jonge & Kostense, 1991; Guntheroth & Spiers 1992; Wigfield, Fleming, Berry, Rudd & Golding, 1992). In addition to the prone sleeping position, maternal smoking and lack of breast feeding have been reported as potential contributing risk factors for SIDS. Research into these risk factors dates back three decades to the 1960's (Guntheroth & Spiers, 1992; Kraus & Bulterys, 1991; Haglund, 1993).

In Western Australia (WA) the most recently published data for the SIDS rate is based on the 1990 birth cohort where 2.1 per 1000 live born infants died from SIDS (Gee, 1992). Data for the 1991 WA birth cohort has yet to be published, but preliminary figures show the rate to be approximately 1.6 per

1000 live births. It is not possible, however, to determine if the rate of SIDS has dropped as this rate is the same as that for the 1989 birth cohort. (V. Gee, personal communication, April 21, 1994). Rates for the complete cohort of children born in 1992 will not be available until late 1994.

Recent studies undertaken in New Zealand (Mitchell, Scragg et al., 1991) and Tasmania (Dwyer et al., 1991) have strongly linked certain postnatal risk factors such as prone lying, maternal smoking and lack of breast feeding with SIDS. All of these factors, in particular prone sleeping position, have been identified as having the potential for behaviour modification.

In response to these important studies a health promotion campaign, entitled 'Reducing the Risks' (RTR) was undertaken throughout WA by the SIDS Foundation. The campaign commenced in 1991 with the aim of changing infant care practices by heightening parental and health professional awareness of these major risk factors, in particular prone sleeping. The campaign included publicity in the general media as well as raising awareness of child health nurses about these risk factors (Maureen-Helen, personal communication, April 29th, 1994). This campaign has been continued on an ongoing basis by the SIDS Foundation in WA since 1991.

There are some data available on infant prone sleeping in WA after the RTR campaign. However, these data are limited because the sample size used by the Australian Bureau of Statistics (Castles, 1993a) was not sufficiently large

enough to accurately estimate the prevalence of prone sleeping of infants aged six months and younger. There are therefore no reliable figures available on the prevalence of infant prone sleeping in WA before and after the RTR campaign, and it is not possible to determine what influence the campaign may have had in guiding or altering parental choice of infant sleeping positions.

1.2 Significance of the Study

Compiling reliable data for WA about existing infant care practices, and those influences which parents believe helpful in initiating and or changing care practices, will have broad application across all health care management disciplines. For nurses in particular, it will provide a foundation from which they can further develop and facilitate health promotion strategies for safe infant care practices in relation to SIDS. Such strategies can then be based on data collected within the state as well as being supported by findings from national (Beal 1988; Dwyer et al., 1991) and international research (Engelberts, de Jonge & Kostens, 1991; Mitchell, Taylor et al., 1992; Golding & Simmons, 1992).

It is also important to know the sources of information that influence the advice given by health care professionals. Agencies such as the SIDS Foundation or the Health Department of Western Australia (HDWA) will be able to identify the most appropriate means of providing information to child health nurses and midwives of current changes in health information and procedures and current

changes in research. This study will provide useful information for future health promotion activities in many areas of maternal and child health care.

1.3 Purpose of the Study

The study has three major aims. First, to ascertain the prevalence of the three postnatal risk factors which have been associated with SIDS, namely, prone sleeping position, maternal smoking and lack of breast feeding in families with young infants residing in WA. Second, to discover if there have been any changes in infant care practices with regard to these risk factors in recently born infants compared with their earlier born siblings, and to ascertain what influencing factors mothers believe to be the most important in deciding initial, or changes to, infant care practices. Third, to collect data from hospitals to examine their policy guidelines on these risk factors, and to collect information on the teaching advice on prone sleeping, maternal smoking and breast feeding given by child health nurses and midwives.

1.4 Research Questions

a) What is the prevalence in WA of five infant care practices, namely, prone sleeping of infants, maternal smoking, lack of breast feeding, dummy use and finger sucking for infants of primiparous and multiparous women?

b) Have there been any changes in these infant care practices for recently born infants compared to their earlier born siblings?

c) Are there any differences in these care practices between primiparous and multiparous women?

d) What are the influencing factors that encourage mothers to initiate or change particular infant care practices?

e) What advice do child health nurses and midwives give to parents about these care practices?

f) What are the influencing factors that affect the advice child health nurses and midwives provide?

g) What are the policies of WA hospitals which accept maternity and infant patients with regard to these care practices?

1.5 Definition of Terms

Sleeping position refers to the usual sleeping position of the infant, either prone (on the abdomen with face to the side), supine (on the back), or lateral (sleeping on the right or left side). Non-prone sleeping position refers to either supine, lateral or a combination of supine and lateral sleeping positions.

Maternal cigarette smoking refers to tobacco smoking consumption of the mother in which there is antenatal exposure, postnatal exposure or combined exposure (antenatal and postnatal exposure). Exposure to passive smoking of the infant from people other than the mother is also included in the study.

Breast feeding is categorised as those infants who were exclusively (all breast feeds) breast fed, mostly breast fed, occasionally breast fed or never/not breast fed.

Risk factor behaviour refers to the behaviour of parents and others caring for infants with regard to the postnatal risk factors associated with SIDS, namely prone sleeping, maternal smoking and lack of breast feeding.

Care practice is a description of specific infant nurturing customs/habits by parents and others in relation to identified risk factor behaviours.

Primiparous woman for the study purposes refers to women who have only given birth once and whose baby was living at the time the questionnaire was mailed.

Multiparous woman for the study purposes refers to women who have given birth on two or more occasions and in which all previous born children and the index baby (recently born baby) were alive at the time the questionnaire was mailed.

Infant refers to the infants of the primiparous women.

Index infant refers to the infants of the multiparous women.

Previous child refers to the sibling closest in age to the index infants.

Dummy refers to dummies or pacifiers.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The causes of SIDS remain unknown but the risk factors are multiple and complex (Kraus, Greenland & Bulterys, 1989; Stanley & Byard, 1991). Understanding the aetiology of SIDS is of prime importance although much of the research to date has concentrated on clarification of the risk factors. Many of these, such as low birth weight, male sex of the infant, young maternal age and high parity of the mother have been identified and it is important to take all these factors into account when conducting research into SIDS (Mitchell, Taylor, Ford et al., 1992). Recent epidemiological research in New Zealand (Mitchell, Scragg et al., 1991) and Australia (Dwyer, et al., 1991) has highlighted the importance of certain postnatal risk factors which are amenable to positive behaviour modification. These risk factors are prone sleeping, maternal smoking and lack of breast feeding. One problem of previous research in relation to these risk factors has been recall bias. The strength of the findings from the study by Dwyer et al., (1991), however, lies in the fact that this study was prospective and not subject to recall bias. In this study as well as the New Zealand study, after taking into account many potentially confounding factors, the three postnatal risk factors remained significant, as well as appearing independent from one another (Mitchell, Scragg et al., 1991).

2.2 Sleeping Position

The significance of prone sleeping position as a risk factor for SIDS has been disputed by a number of researchers because of the design limitations of many of the studies which were retrospective (Adamson, 1989; Stanley & Byard, 1991). As mentioned previously such limitations include recall bias, together with lack of adequate or representative controls to cases and inadequate checks for confounding variables.

Beal and Finch (1991) undertook a review of case-control studies for prone sleeping position and SIDS spanning twenty three years. Although the studies varied greatly a meta-analysis showed an overall greater risk of SIDS when the prone sleeping position was used. These authors also pointed out that there are no publications that demonstrate a reduced use of the prone sleeping position where infants have died of SIDS. Guntheroth and Spiers (1992) also were unable to find any research that reported an increase in the risk of SIDS with use of the non-prone position.

Alternative sleeping positions promoted in intervention campaigns have been lateral (side) and supine (back), however, there is conflicting information about the stability of these positions. Engelberts and de Jonge (1990) found that 30% of infants aged under four months rolled from the lateral to the supine position, and for infants over four months approximately 80% rolled from the lateral to the supine position. They also noted that approximately 4% of the younger infants rolled from lateral to prone, and 3% rolled from supine

to prone positions. Beal (1991) studied a cohort of 12 week old infants where over half had changed from the side to the supine position during the night sleep and none of these infants had rolled over into the prone position. However, with regard to infants who had died of SIDS in South Australia between 1985 and 1990, Beal also pointed out that over half of them who had been placed to sleep in the lateral position were found dead in the prone position.

Beal and Porter (1991) noted the low rate of SIDS in communities that use the supine position. Lee, Chan, Davies, Lau and Yip (1989) suggested from their Hong Kong study that supine sleeping may be protective for SIDS. An associated concern with the supine position is the risk of aspiration of gastric fluids, particularly where gastro-oesophageal reflux exists. It is suggested that gastro-oesophageal reflux may also be a risk factor for SIDS (Jolley, Halpern, Tunell, Johnson, & Sterling, 1991; MacFadyen, 1993). Contradictory results are presented by other authors in which they report no increased risk of death from aspiration as a result of the supine position (Engelberts, de Jonge & Kostense, 1991; Gilbert-Barness & Barness, 1993). In South Australia, between 1985 and 1989, there were three sudden and unexpected deaths (not SIDS) where aspiration was the cause of death. In each case the infant was found in the prone position (Beal & Porter, 1991). However, the report is unclear if the infants had been placed in the prone position, or had rolled into that position during sleep.

In 1992, for the first, time the Australian Bureau of Statistics included questions relating to infant sleeping position in a nationwide population survey (Castles, 1993a). This survey demonstrated that a total of 18.6% of all children aged less than two years in WA were placed to sleep in the prone position. However, when this figure is broken down into infants aged between three and six months of age, the sample size within WA becomes very small. Consequently these figures are unreliable and an accurate estimate of the prevalence of prone sleeping position in this state cannot be made from these findings. Nationally the combined states results indicate that the use of prone sleeping position was 7% for infants aged under six months. The report by Castles (1993a) demonstrated substantial variation in the use of the prone sleeping position within each state, the highest (in the Northern Territory) was 27% and the lowest (in Tasmania) was 5%.

2.3 Breast Feeding

Although breast feeding has been reported as a significant protective factor in the prevention of SIDS, it is still not clear how this protective mechanism works (Hoffman, Damus, Hillman & Krongrad, 1988; Bernshaw, 1991; Mitchell, Scragg, et al., 1991). Hoffman, et al., (1988) found breast feeding to be protective against gastrointestinal infections and to a lesser extent protective against other infections. Ford et al., (1993) suggested that other enhancing or environmental influences which encourage the continuation of breast feeding may also contribute to the apparent protective mechanism of breast feeding.

A multivariate analysis of the results of the National Institute of Child Health and Human Development SIDS Cooperative Epidemiological study in the United States of America (NICHHD) showed that although the relative risk for SIDS of not breast feeding was less than two, it did remain statistically significant in the multivariate model (Hoffman & Hillman, 1992). Mitchell, Taylor et al., (1992) also demonstrated that a lack of breast feeding increased the risk of having an infant die of SIDS by 1.8, after controlling for maternal variables such as socioeconomic status, race, parity, education and marital status, and infant variables such as season, birth weight, and sex.

The literature on breast feeding generally fails to describe accurately what actually constitutes breast feeding practice (Bernshaw, 1991). For example, the NICHHD Study categorised breast feeding according to those who were never breast fed, those who were mostly and those who were exclusively breast fed (Hoffman, et al., 1988). This particular study demonstrated that the protective effect of breast feeding appeared to occur for those infants who were mostly or exclusively breast fed. In another study, Ford et al., (1993) estimated that the risks of an infant dying of SIDS was reduced by 50% where exclusive breast feeding had occurred, and to a lesser extent where partial breast feeding had occurred.

2.4 Maternal Smoking

Increasingly there is evidence indicating that maternal smoking is a major independent risk factor for SIDS (Taylor & Emery, 1988; Bulterys, 1990;

Taylor, 1991; Milerad & Sundell, 1993). Dwyer and Ponsonby (1992) estimated that women who smoked were one and a half to five times more likely than non-smokers to have infants who died from SIDS. After controlling for other maternal risk factors such as marital status, education, parity and age, maternal smoking remained strongly related to an increased risk of SIDS (Malloy, Kleinman, Land & Schramm, 1988; Haglund & Cnattingius, 1990). Adverse socio-economic factors, less years of education, young age of mothers, high parity and being unmarried are also associated with high tobacco consumption (Alison, Counsell, Geddis & Sanders, 1993; Nordstrom, Cnattingius & Haglund, 1993).

Haglund and Cnattingius (1990) in their population based study regarding cigarette smoking and SIDS highlighted the problem of self-reporting of smoking habits because of the social undesirability of smoking. They concluded that if maternal smoking did not exist there could be a 27% drop in the SIDS rate.

A number of studies have revealed a dose response curve for the risk of SIDS with regard to cigarette smoking (Haglund & Cnattingius, 1990; Mitchell, Taylor et al., 1992; Nordstrom, Cnattingius & Haglund, 1993). For example, in the work by Haglund and Cnattingius (1990), mothers who smoked one to nine cigarettes per day had twice the risk of having an infant die of SIDS compared with non-smoking mothers. Mothers who smoked between ten and twenty cigarettes per day had three times the risk. The New Zealand study (Mitchell,

Ford et al., 1993) showed that where a father smokes and the smoking consumption of the mother is above 20 cigarettes per day, the risk of SIDS was increased seven fold.

The timing of exposure of passive smoking of the fetus and/or infant occurs during the antenatal period, during the postnatal period or during both these times. The role of passive smoking could be due to maternal smoking and/or to smoking by other members of the household (Nicholl & O'Cathain, 1989; Schoendorf & Kiely, 1992). Milerad, Rajs and Gidlund (1994) recently investigated cotinine levels in pericardial fluid in infants who had died suddenly and unexpectedly, and demonstrated moderate to high levels of cotinine in 70% of autopsied infants. They concluded that for SIDS victims and other infants who had sudden unexpected deaths notable levels of tobacco exposure were present.

2.5 Methods of Previous Surveys

Green, Kreuter, Deeds and Partridge (1980) suggest that the inventory approach or special survey is a valid and useful way of making an assessment of a community or health problem. Surveys which have previously been undertaken reported good response rates by parents to questionnaires which requested retrospective data about infant sleeping position (Beal, 1988; Engelberts, de Jonge & Kostense, 1991).

A serious limitation of retrospective follow-up studies is recall bias which reduces the ability to reach causal interpretations (Adamson, 1989; Oppenheim, 1992). It has been argued that most studies into the association of prone sleeping and SIDS are weak and unreliable because of their retrospective nature. Variation in recall of both controls and cases was demonstrated by Drews, Kraus and Greenland (1990) in relation to certain risk factors for SIDS, but the authors argued that the variation was not sufficient to introduce overall significant bias. Congruence between retrospective and prospective data has also been reported by various authors (Dwyer et al., 1991; Mitchell, Taylor et al., 1992; Wigfield et al., 1992). Dwyer et al. (1991) further argue that the criticism of recall bias in previous studies related to parental recall may not be valid. In a later report by Gibbons, Ponsonby & Dwyer (1993) recall for parental smoking and infant feeding practices and sleeping position was found to be reliable. However, these authors did raise concerns about the reliability of retrospective information regarding changes in infant sleeping position due to the changing preference of sleeping position, and also the increased mobility of infants as they grow older.

2.6 Intervention Campaigns

The main focus of recent international intervention campaigns related to SIDS has been directed at reducing major postnatal risk factors, in particular the prone sleeping position of infants. The intervention programme in southern New Zealand showed that whilst the proportion of infants sleeping prone declined from 41.8% to 2.4% between 1986 and 1990, there was a

concomitant small reduction of admitted maternal smoking of 4%, and an 11% increase in breast feeding of infants at one month of age (Taylor, 1991).

Research findings do confirm a concurrent drop in the rates of SIDS in countries where there have been intervention campaigns discouraging the use of prone sleeping such as Holland (Engelberts & de Jonge, 1990), Australia (Beal, 1988), New Zealand (Mitchell, 1991) and the United Kingdom (Wigfield et al., 1992) with decreases ranging from 20% to 67% of the initial SIDS rate. Following an intervention programme in Avon in the United Kingdom, Golding & Simmons (1992) state that there have been no SIDS cases reported between March 1992 and February 1993 compared to between 30 and 40 deaths from SIDS per year in previous years. Some caution, however, should be taken with interpretation of these results as they represent the results of a single year rather than a consistent change over time.

Important guidelines when carrying out intervention campaigns related to SIDS are described by Kohler & Markestad (1993). They state that health professionals and agencies should be adequately informed and prepared prior to public recommendations and intervention campaigns. Stewart, Mitchell, Tipene-Leach and Fleming (1993) contrast the different approaches in the intervention campaigns between New Zealand and the United Kingdom. New Zealand approached the programme in a proactive way, by first educating health professionals prior to a wider promotion of the campaign to the community and to parents. In the United Kingdom, however, the intervention

campaign tended to be media driven. These authors describe some of the difficulties encountered when the United Kingdom campaigns commenced. Important information related to the risk factors did not adequately disseminate from nursing managers down to clinical practitioners, and there was a lack of adequate supporting information in professional journals.

Scott, Campbell & Gorman (1993) in Scotland found that health visitors had introduced changed advice on prone sleeping well before official recommendations had come from the district chief medical officer. Their study indicated that the main influences affecting change of advice for prone sleeping were professional journals and the mass media. These health professionals had altered their advice in respect to SIDS to parents, particularly with regard to the prone sleeping position.

2.7 Dummy Use

Though not identified as a risk factor for SIDS, the issue of dummy use has been recently introduced into the SIDS debate. A report by Mitchell, Taylor et al. (1993) in New Zealand suggests a possible protective role of dummy use with respect to SIDS. Dummy use over the preceding two weeks was found to be higher in control cases compared to SIDS cases but not at a significant level. However, a significant difference was obtained when dummy use was measured in cases for the previous sleep compared to a nominated sleep for controls. A regional difference in the prevalence of dummy use was also observed. Potential confounding factors such as maternal age, education and

breast feeding were controlled for in the analysis. However, the report lacks clarity about the extent and nature of breast feeding in relation to dummy use. As this is the first such study to identify this association, the authors advocated repeated research into dummy use.

CHAPTER 3: THEORETICAL FRAMEWORK

The theoretical framework chosen for this study is the PRECEDE-PROCEED Model for health promotion, planning and evaluation, developed by Green & Kreuter (1991). This model is a refinement of the earlier PRECEDE model first developed by Green, Kreuter, Deeds & Partridge (1980). It is a health promotion framework through which behavioural change can be planned, promoted and evaluated (McMurray, 1993).

The significance of the PRECEDE/PROCEED model in relation to this research study is that it is based on epidemiological, behavioural and educational principles. This is particularly useful as this study aims to ascertain the prevalence of risk factors associated with SIDS which have the potential to be modified.

The model focuses on predisposing, enabling and reinforcing factors that have a direct influence on health behaviour and change. It also provides a framework upon which health promotion and education strategies can be planned.

The nine phases of the PRECEED/PROCEED model include a social diagnosis, an epidemiological diagnosis, a behavioural and environmental diagnosis, an educational and organisational diagnosis, an administrative and policy diagnosis, an implementation phase, and three evaluation phases which comprise process, impact and outcome evaluation.

The model is utilised to provide a framework to describe and measure postnatal risk factors associated with SIDS, such as prone sleeping position, maternal smoking and lack of breast feeding. The development of this model to SIDS (see Figure 1) was based on the PRECEDE planning form developed by Anderson and MacFarlane (1988). However, for this study the planning form has been expanded to allow for the increased emphasis on the evaluative phases developed in the PROCEED model.

Social Diagnosis is the first phase of the model and involves determining a particular problem that effects the quality of life of those in the community such as infant mortality and the social implications of this problem on society. For example, the emotional consequences of the loss of a young child to a family and the community.

The second phase involves an Epidemiological Diagnosis. At this stage the problem is given an epidemiological description which measures and defines morbidity and mortality as one or as a series of problems. A specific diagnostic label is then assigned to the problem, such as Sudden Infant Death Syndrome.

Behavioural & Environmental Diagnosis is the third phase. This phase considers behavioural and non behavioural causes of the defined problem as important factors in influencing behavioural habits or adaptations. In the case of SIDS there are multiple contributing factors. Some non-behavioural factors

for the infant can include infant gender, pre-existing medical conditions, or adverse gestational factors, and for the mother, factors such as maternal age, level of education, plurality, and pregnancy complications. External factors can include health care providers' advice on care practices, weather conditions, and home heating. Behavioural factors can involve parental non-compliance or lack of knowledge of newly recognised risk factors such as prone lying.

Educational and Organisational Diagnosis forms the fourth phase and the role of predisposing, enabling and reinforcing factors are explored in this stage. Pre-disposing factors describe an individual's attitudes, beliefs and values, all of which affect decisions or choices in infant care practices. Enabling factors detail personal and community knowledge or potential for change that can enhance or detract in the decision making process. This can be described as the personal development and past experience of the mother; community and traditional practices of the family and community, media influences, and health professional advice. Reinforcing factors characterise the positive or negative feedback and responses of others that may effect changes or insistence of the same behavioural pattern. Examples include continued media exposure and health professional advice about the non-prone sleeping position.

The fifth phase is Administrative and Policy Diagnosis in which health education strategies are developed and implemented based on the previous four phases. Awareness and consideration of the research findings

associating certain risk factors with SIDS and the subsequent development of the RTR campaign is such an example.

Phase six is the Implementation phase. Here the specific health promotion campaign is implemented towards specifically targeted groups in the community. The RTR campaign involved heightening health professional awareness of the risk factors as well as achieving wide media coverage particularly with regard to infant sleeping position.

Phases seven, eight and nine involve Process, Impact and Outcome Evaluation. In phase seven, Process Evaluation is the description of a programme, such as the RTR campaign in WA. Phase eight of the model represents Impact Evaluation. Here consideration is made as to the impact a health promotion programme has had in altering behaviours as a consequence of the predisposing, enabling, reinforcing and environmental factors. In this study information was sought to describe the advice, practices and influencing factors of mothers and health professionals regarding risk factors associated with SIDS. The final phase of health behaviour is Outcome Evaluation. This looks for social indicators such as mortality rates, or SIDS rates over time such as the drop in the rate of SIDS in WA since the RTR campaign commenced in 1991.

Once evaluation has been undertaken, it is then possible to reapply the results of the process to the PRECEDE/PROCEED model. In this way further

refinement and improvement of health promotional and educational strategies can be achieved. In relation to SIDS, the results of this study will provide an epidemiological description of current infant care practices, and professional advice on risk factor behaviours in WA. Also gaps in existing knowledge about the prevalence of risk factor behaviours related to SIDS in WA are described. This information can then be used to enhance and develop, where needed, new strategies for the on-going RTR campaign related to SIDS in WA.

PROGRAMME EVALUATION

Phases 7, 8 & 9

Process

Research Method:
Survey mothers who have recently given birth about Risk Factor Behaviour, Changes & Sources of Information influencing choices of specific behaviours.

Impact

Describe:
1. Prevalence of care (risk) factors.
2. Changes in care (risk) factors.
3. Significant sources of Enabling and Reinforcing Factors that promoted specific health enhancing actions.

Outcome

Social Indicators:
Changes in SIDS rate over time.

PROGRAMME IMPLEMENTATION

Phase 6

Health Promotion Campaign

'Reducing the Risks Campaign' Commenced September 1991 by the SIDS Foundation

ADMINISTRATIVE DIAGNOSIS

Phase 5

Health Education Component

Development of health promotion programme - "Reducing the Risks Campaign"

Programme objectives:
1. Heightened health professional awareness of Risk Factors
2. Reduce risk factor behaviours in the community.

Client Understanding:
Health professionals targeted to:
1. Promote change in Risk Factor Behaviours of clients.
2. Increase public awareness of the issues.

Programme Content:
1. Brochures by SIDS Foundation
2. HDWA circular to Regional DON's.
3. Lectures by SIDS Foundation personnel to Child Health Nurses.

EDUCATIONAL DIAGNOSIS

Phase 4

Predisposing Factors

Existing Personal factors for Mothers:
1. Knowledge
2. Values
3. Attitudes
4. Perceptions.

Enabling Factors

Maternal:
1. Self reading
2. Past Experience.

Community/Family:
1. Traditional practices
2. Advice from family and friends
3. Media influences
   -health reports
   -advertising
   -current affairs stories
   -subliminal messages.

Professional:
1. Medical, GP & Obstetrician
2. Birth hospital
3. Child Health Nurses
4. Midwives
5. State Health Dept.
6. Professional Bodies-
   -SIDS Foundation
   -Nursing Mothers' Association
7. Promotional literature
   -brochures.

Reinforcing Factors

As for Enabling Factors.

Reinforcing and Enabling Factors contributing and enhancing each other.

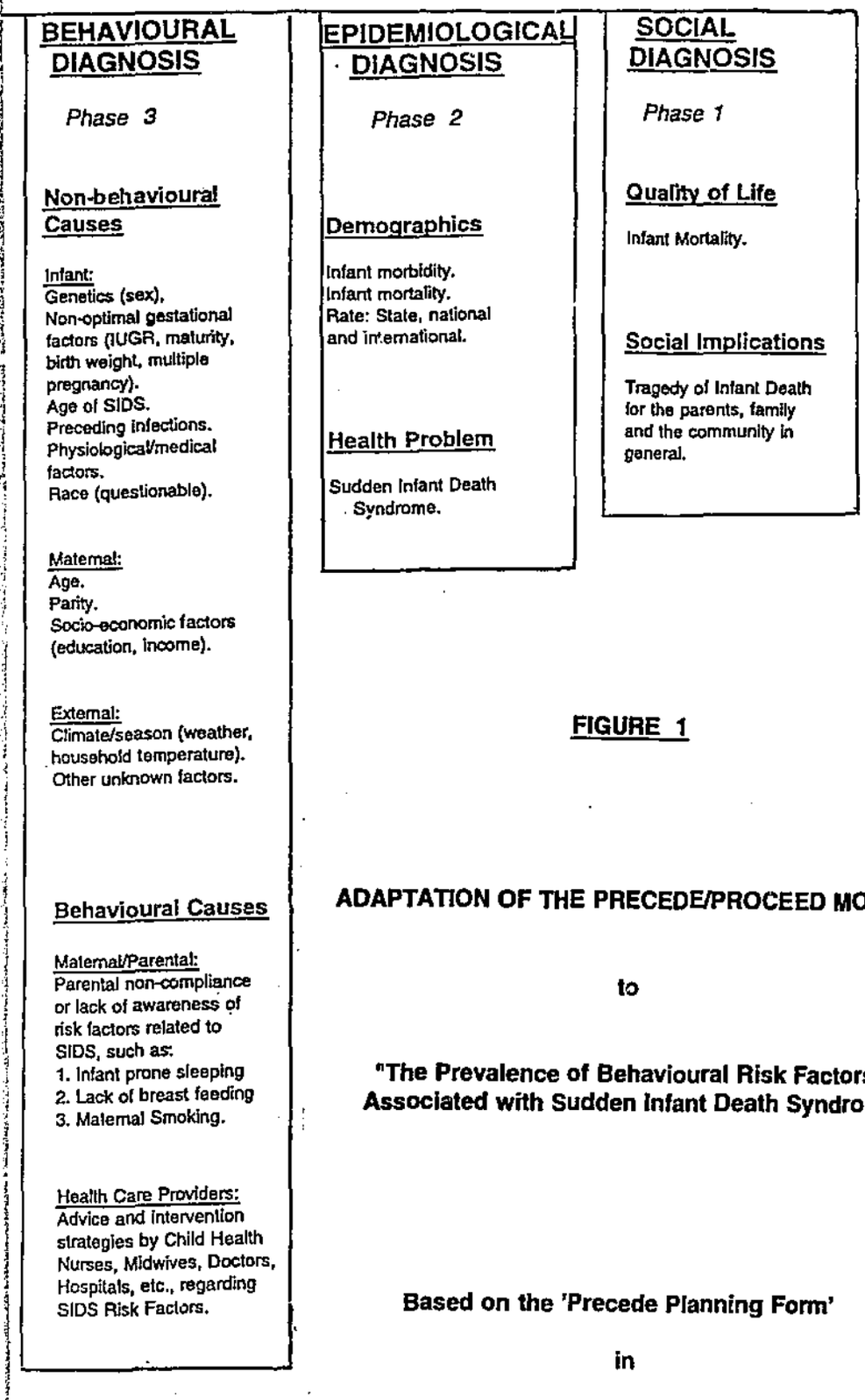


FIGURE 1

ADAPTATION OF THE PRECEDE/PROCEED MODEL

to

"The Prevalence of Behavioural Risk Factors Associated with Sudden Infant Death Syndrome"

Based on the 'Precede Planning Form'

in

Anderson, E, E.T., & MacFarlane, J.M. (1988). Community as Client: Application of the Nursing Process. Philadelphia: J.B. Lippincott, p408.

Chapter 4: METHODS

4.1 Research Design

A descriptive, comparative survey was used for this research study. The survey method is a way of systematically collecting data from a sample group (Marsh, 1982). Green, Kreuter, Deeds and Partridge (1980) suggest that the inventory approach or special survey is a valid and useful way of making an assessment of a community or health problem. Some advantages of mail surveys compared to interview based surveys include wider distribution, less distribution bias of sample, no interviewer bias, greater possibility of anonymity of the respondent, and cost-savings. And, conversely, some of the limitations include potential problems with lengthy and or difficult questionnaires, greater chance of misinterpretation of questions, poor response rate, and respondents no longer residing at address (Erdos, 1983; Polit & Hungler, 1989).

To ensure a representative sample for four of the five groups of participants, which included primiparous and multiparous women, child health nurses, and midwives, a postal survey design was chosen as it offered the greatest potential to reach and include all participants in city, rural and remote country areas throughout WA. Random samples of these four groups were also obtained, which were likely to be representative of the total populations in each group. All hospitals in WA which accepted maternity and infant patients were included in this survey so that sampling was not required.

Descriptive studies are useful tools to describe phenomena or gain more information about a particular issue (Burns & Grove, 1987). The descriptive aspect of the study was designed to obtain information from mothers, child health nurses, midwives and hospital directors of nursing, on care and advice practices with regard to the risk factor behaviours related to SIDS. The comparative aspect of the study was used to describe changes over time in parental infant care practices, and differences in primiparous and multiparous women.

4.2 Sample

In order to generalise the findings of a study to the general population, the sample chosen must be representative of the wider population (Woods & Catanzaro, 1988). Different methods were used to obtain representative samples of the five distinct groups, primiparous and multiparous women, child health nurses, midwives and hospitals in WA.

Mothers:

Sampling Method:

Samples of primiparous and multiparous women were selected from the Midwives' Notification System maintained by the HDWA (Gee, 1993).

The sample for the pilot and the main study were selected from mothers who had given birth in WA approximately three months prior to data collection. This time frame was chosen to obtain data on infant care practices at an age

when infants are most at risk of SIDS (Mitchell, Scragg et al. 1991). The sample for the pilot study included one birth from approximately every 20 occurring during the month of May 1993, and for the main study, one birth from approximately every three occurring during June 1993.

Exclusion Criteria for Mothers:

Exclusions were made for those mothers who had had a previous stillborn child or live born child that had subsequently died. Exclusions were also made for those mothers whose recently born baby was stillborn, adopted or had died. Extreme care was taken to check all recently born infants who had died and whose deaths were registered with the Registrar General up to and including the day of mailing the questionnaire. Mothers with multiple births were also excluded from the study as they represented a special subset of infants, and the number obtained in the sample would have been too small to obtain any useful results.

Sample Size for the Main Study:

Given that the principal outcome of interest was *change in preferred sleeping position* from the previous child to the index infant of multiparous women, analysis was based upon McNemar's test for paired proportions (Siegel and Castellan, 1988). Sample size estimation was based upon data reported by Beal (1988). Beal reported that approximately 30% of babies were being placed in the prone position prior to campaigns against the use of that position. In addition, she demonstrated that between 1984 and 1988 the

proportion of mothers placing their babies in the prone position fell by approximately one third. In order to render the analysis more robust, it was also assumed that one in twenty mothers who had previously placed their babies in the non-prone position would act contrary to advice and would start to use the prone position. Given a total sample size of **N**, these results would correspond to 0.2**N** mothers consistently choosing the prone position, 0.1**N** changing from prone to non-prone, 0.035**N** changing from non-prone to prone and 0.665**N** consistently choosing the non-prone position.

That being the case, McNemar's test (without continuity correction) statistic would therefore equal $0.1\mathbf{N} - (0.1\mathbf{N}+0.035\mathbf{N})/2 = 0.0325\mathbf{N}$ with standard error $1/2 \times (0.1\mathbf{N} + 0.035\mathbf{N})^{0.5} = 0.184 \times \mathbf{N}^{0.5}$. For a power of 90% and adopting $P<0.05$ as the standard definition of statistical significance, **N** may therefore be estimated, in the standard manner (Armitage & Berry, 1987), as the solution to the equation:

$$0.0325\mathbf{N}/(0.184 \times \mathbf{N}^{0.5}) = (1.96 + 1.28)$$

which may be re-arranged to produce:

$$\mathbf{N} = (1.96 + 1.28)^2 \times (0.184/0.0325)^2 = 336$$

A total sample size of approximately 340 multiparous women was therefore adopted.

Beal's (1988) response rate of 86% was used as a guide to calculate the final number of questionnaires to mail out. However, a more conservative figure of an 80% response rate was chosen, which gave a minimum number of 420 questionnaires for multiparous women.

With regard to the sample size required for primiparous women, the study aimed to ascertain differences in behaviour between primiparous and multiparous women. It was assumed that twice as many primiparous as multiparous women placed their infants in the non-prone position (as primiparous women may be more likely to receive up-to-date information regarding infant care practices), therefore 176 primiparous women would be required in the study based on a calculation using 90% power and a significance of p less than 0.05. Again, using an 80% response rate, a minimum sample size of 210 was selected. The ability to detect *small* differences in behaviour between primiparous and multiparous women would have meant an unmanageable increase in the sample size.

Child Health Nurses:

Sampling method and size for the main study:

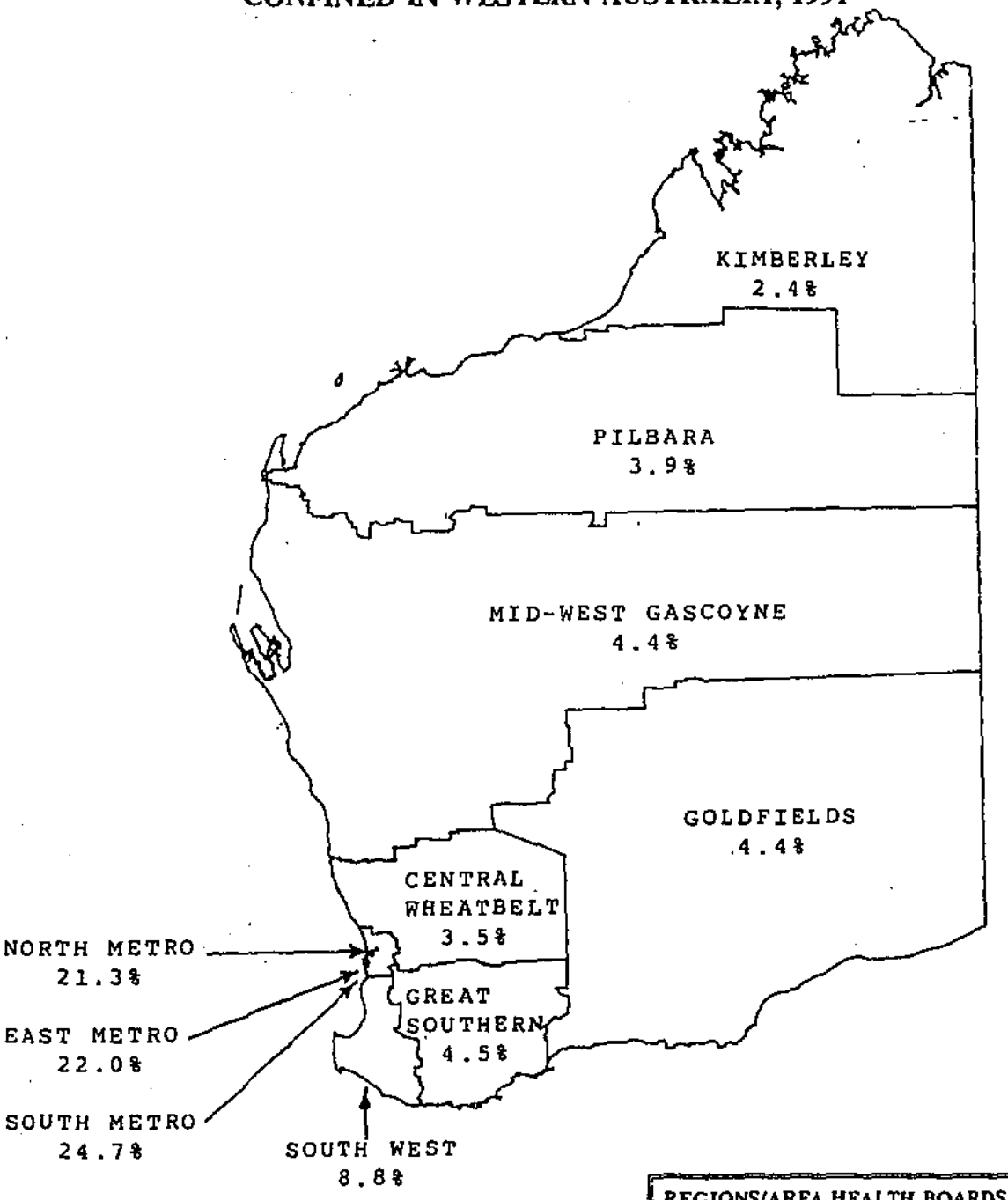
A sample of 80 child health nurses was chosen for the study. To ensure a representative sample of child health nurses throughout the state, the sample of 80 was randomly stratified based on the number of births in each Health Service Management Region in WA (see Figure 2).

Each of the 10 Regional Directors of Community Nursing assisted in the selection of the child health nurses. Some Directors chose to undertake the random allocation of a pre-determined number of child health nurses who were based in child health clinics in their region, whilst other Directors chose to provide lists of names of practicing child health nurses to the researcher

Figure 2

Gee, V. (1992). Perinatal Statistics in Australia. Ninth Annual Report of the Western Australian Midwives' Notification System 1991. (Statistical Series /33) Health Department of Western Australia. p. 10.

HEALTH SERVICES MANAGEMENT REGION OF RESIDENCE OF WOMEN CONFINED IN WESTERN AUSTRALIA, 1991



Excludes births less than 500 grams birthweight and those 24 (0.1%) mothers resident outside Western Australia.

SOURCE: Midwives' Notification System

REGIONS/AREA HEALTH BOARDS		%
Metropolitan:	North	21.3
	East	22.0
	South	24.7
	Total	68.0
Country:	South-West	8.8
	Great Southern	4.5
	Central	3.5
	Goldfields	4.4
	Mid-West Gascoyne	4.4
	Pilbara	3.9
	Kimberley	2.4
	Total WA	100.0

who then undertook the stratified random selection of a pre-determined number according to regional area. The child health nurses chosen for the study were practising as child health nurses and based in child health centres. This sample did not include managerial level child health nurses.

Sampling method and size for the Pilot Study:

A convenient sample of nine practicing child health nurses was obtained representing rural and urban areas for the pilot study. All respondents except for two were unknown to the researcher, and individual responses were anonymous. The pilot group of child health nurses was similar to the main study group in that they were all based and practising in child health clinics and represented urban and rural areas.

Midwives:

Sampling method and size for the Main Study:

A random sample of 80 registered midwives was chosen for the study. The Nurses Board of WA (NBWA) undertook the random selection from the midwives' register. There was no way of knowing if the selected midwives were currently practising or for that matter working in any area of nursing as the NBWA did not have such information contained within the register. This sample represents approximately 2% of the total midwifery register (n=3857) held by the NBWA at the end of June 1993 (L. Powell, personal communication, May 19th, 1994). All midwives in independent practice

associated with the Midwives in Private Practice group in WA (n=13) were included in the study.

Sampling method and size for the Pilot Study:

This comprised a convenience sample of seven registered midwives, some of whom were working and others not working. Although four of the pilot group were known to the researcher, all individual responses were anonymous. The pilot sample included both employed and unemployed midwives. Country midwives were not included in the pilot study, but otherwise it is unlikely that the sample differed in important characteristics from the total population of registered midwives.

Hospitals:

Sample for Main Study:

All hospitals which accepted maternity and or infant patients in WA were included in the study, including tertiary and non-tertiary, public and private, urban and rural. Exclusions were made for nursing posts and also for hospitals/units under the direct jurisdiction of a larger hospital. No pilot study was undertaken for this group as all eligible hospitals were included in the main study.

4.3 Instruments and Procedures

Instrument Development:

Five questionnaires (see Appendices a, b, c, d, e) were developed as the instruments for this study to obtain information about infant care practices and advice from mothers, child health nurses, midwives and directors of nursing in hospitals. Permission was obtained to access previously used questionnaires as the basis for the development of the questions in questionnaires to mothers (Beal, 1991; Macdonald, 1992), and child health nurses and midwives (Scott et al., 1993).

A survey using postal questionnaires is a useful method to collect data about the prevalence or incidence of a phenomenon within a population (Woods & Catanzaro, 1988). Cartright (1983) states that questionnaire design can be enhanced when questions are unambiguous and have relevant meaning for the respondents. To minimise the limitations of self-reported questionnaires careful consideration was made during the development phase in respect to wording of questions, layout, instructions, order of questions, and setting up for coding (de Vaus, 1987).

A variety of question styles utilising open-ended, closed, and ranking questions were employed. Use of a combined format such as this offers respondents an easy and quick way of answering a lengthy questionnaire, while at the same time, providing them with the opportunity to qualify and explain some of their answers (de Vaus, 1987).

The questionnaires to mothers, child health nurses and midwives contained an introductory letter, an instruction page, and four sections related to sleeping position, dummy use and finger sucking, breast feeding, and maternal smoking. The questionnaire to directors of nursing in hospitals included the above topics with the exclusion of dummy use and finger sucking.

Each section in the questionnaires to mothers, child health nurses and midwives followed a similar format. The aim was to provide the respondent with a familiar and predictable questioning/response pattern to facilitate completion of the questionnaire (de Vaus, 1987). This was particularly important for section four which comprised a section on maternal smoking that some mothers may have been hesitant to answer.

During the developmental phase of the questionnaires consideration was given to ensure that the questionnaires were capable of providing answers to the research questions whilst remaining as easy to complete as possible for the respondents.

Questionnaire to mothers:

Phase 1: Core information required to answer the research questions on each of the risk factors was established. Two similar questionnaires were developed, one for primiparous women and one for multiparous women (see Appendices a, b). The questionnaire to multiparous women included additional questions pertaining to their previous child (see Appendix b).

Mid-way during questionnaire development a further important issue was raised as a result of research work undertaken in New Zealand (Mitchell, Taylor et al., 1993) which related to dummy use. It was decided to include this issue in the questionnaire, particularly as it had received very little publicity at that time, and it would provide useful baseline information for future monitoring and reference. Appropriate ethical approval was obtained to add this section to the questionnaire. Reference questionnaires were unavailable for dummy use, however the questions used followed a similar format to the rest of the questions.

Phase 2: The first stage of pre-testing involved several drafts of the questionnaire in which questions, wording, format and topic order were restructured. Colleagues and friends from diverse backgrounds including mothers, child health nurses and midwives contributed to the pre-testing.

Phase 3: The final stage of pre-testing involved a convenience sample of seven mothers from different socio-economic backgrounds with small children ranging from three months to five years in age, and also four colleagues, some of whom had children. No further changes were required at this stage to the questionnaire as all those involved considered it satisfactory. The time required to complete the questionnaire ranged between five and 15 minutes. This phase was important in establishing general coding guidelines.

Pilot Study: The questionnaire (inclusive of introductory letter, instruction page and four sections) was then formally piloted on a sample of mothers selected from the same source as the main study. The only difference in the pilot sample and the main study was that the mothers in the pilot study gave birth in May 1993 and those in the main study gave birth in June 1993. The questionnaires were adequately completed with no obvious difficulties encountered with respect to understanding questions or ability to answer questions satisfactorily. No difficulties or comments were made by the mothers and no changes were made to the questionnaire as a result of the pilot study. However, valuable information was gained with respect to coding guidelines for the open-ended questions.

Questionnaires to Child Health Nurses and Midwives:

A similar process was used in the development of the child health nurses' and midwives' questionnaires as to that for the mothers.

Phase 1: Again questionnaire format and core information required to answer the research questions on each of the risk factors was established. Questionnaires to child health nurses (see Appendix C) and midwives (see Appendix D) were identical apart from demographic questions on page one relating to type of nursing practice.

Phase 2: This phase closely followed phase two for the mothers. The time required to complete the questionnaire ranged between five and 50 minutes.

Phase 3: The final stage of pre-testing involved a convenience sample of eight child health nurses and seven midwives, most of whom were fellow post-graduate students. Minor alterations were made and general coding guidelines were developed.

Pilot Study: The questionnaires were then formally piloted. No changes were made to the questionnaires as a result of the pilot study. As with the mothers' pilot study, no difficulties were apparent with respect to completing the questionnaire. However, valuable information was gained with respect to coding guidelines for the open-ended questions.

Questionnaire to Hospitals:

The request to hospitals (see Appendix E) for information of policy and guidelines was kept very simple. As the intention was to include all hospitals accepting maternity and infant patients it was decided not to undertake a pilot study of this group. Had this been done it would have been difficult to then include the pilot hospitals in the main study.

Data Collection Procedures:

Between June and October 1993 questionnaires were mailed to the five groups of respondents, primiparous women, multiparous women, child health nurses, midwives, and hospitals. Follow-up procedures were carried out for each group and each respondent was provided with a reply-paid envelope for both the initial and subsequent postal requests. The longest time it took for

questionnaires to be returned in the main study was nine to ten weeks for respondents in all groups.

Primiparous and multiparous women: The pilot questionnaires were posted to mothers during August 1994 of which 81% of the responses were received at this office within four weeks. The main study was then undertaken and the questionnaires were posted in September 1993. Four weeks later a follow-up request was mailed to those women in the main study who had not responded to the initial request. Two weeks following this request telephone contact was made where possible with the mothers. Every effort was made to treat each telephone interview in a similar way with respect to introduction of the caller, the reason for the call, and the request for the mother's help. Where requested, a further questionnaire was posted to mothers. A small group of mothers did not participate in the study because English was not their first language. In a few instances the mother indicated that she did not wish to participate in the study. At the close of each telephone discussion the mother was thanked for her time and no further contact was made with the mothers.

A printing error on page six of the questionnaire for primiparous women was noted one week after the initial mail-out. It was considered important to address this problem so that two weeks after receiving the initial questionnaire, these women received a letter explaining the error plus a copy of the revised section three (pages five to seven) relating to breast feeding. Although only one page of the questionnaire needed to be answered the

mothers were asked to complete the whole section again. This was done to ensure continuity of answers within the section as this may not have occurred if the missing page was answered separately. In all other respects the follow-up procedures progressed in the same manner as for the multiparous women. For coding purposes the responses on pages five and seven contained in the original questionnaire, and the response on page six of the revised section were used.

Child Health Nurses and Midwives: The pilot studies using mailed questionnaires for both these groups were undertaken in June 1993. Questionnaires were then posted to the main study group in July 1993. Similar to the mothers, four weeks after the first questionnaire, a follow-up request was sent to those nurses and midwives who had not responded. For both child health nurses and midwives, however, no telephone follow-up was undertaken.

Hospitals: The original questionnaire was posted to the Director of Nursing in each of the study hospitals in July 1993. Four weeks following the initial request, telephone contact was made with each Director at those hospitals which had not responded. In most instances the researcher spoke to the Director of Nursing, otherwise the contact person was a senior nurse. The telephone request followed the same format as that for the mothers and the responses were very positive and helpful. Some of the Directors and senior

nurses requested another copy of the initial request, and this was mailed or sent by electronic facsimile.

4.4 Reliability and Validity

Reliability:

Reliability is described by Burns and Grove (1987) as the ability of an instrument to accurately measure the variable or the item being assessed. Although it was not possible in the time frame of the study to administer repeat questionnaires in order to accurately measure reliability, the questionnaires were designed to have some measures of internal consistency. For example, questions within each section were generally related to one another so that consistent answers were required. With regard to the mother's questionnaries reliability checks were also possible by comparing items with the Midwives' Notification Forms. These comparisons indicated that the instruments were highly reliable, for example there were only two discrepancies in the infant's date of birth and five discrepancies in the mother's date of birth from 542 respondents.

Due to a printing error in the questionnaire (see p 36), it was necessary for approximately half of the primiparous women to repeat the section on breast feeding. Thus, there was an unplanned opportunity to compare the reliability of mothers' responses with respect to breast feeding (see p. 57).

Validity:

Validity represents the ability of an instrument to measure that which it was designed to measure (Burns & Grove, 1987). Content and face validity of the questionnaires for mothers, child health nurses and midwives was achieved through repeated pre-testing with representative groups, expert opinion from researchers in child health and the SIDS Foundation, and formal pilot studies. Questionnaire development had been refined during the pre-testing phases such that the respondents (mothers, child health nurses and midwives) in the formal pilot groups adequately understood and answered all questions in the questionnaires. The respective responses for each of these three groups to the pilot study and the main study were similar. An indication that the questions did obtain accurate information is demonstrated by the responses of mothers, child health nurses and midwives to influencing factors or sources of information regarding the risk factors. As one would expect the mothers, child health nurses and midwives selected different influencing factors for each of the postnatal risk factors mentioned in the questionnaires.

4.5 Ethical Considerations

The study was carried out under the strict protocols laid down by the Committee for the Conduct of Ethical Research (CCER) at Edith Cowan University (see Appendix F), the Confidentiality of Health Information Committee (CHIC) at the HDWA (see Appendix G) and the Nurses Board of WA (NBWA) (see Appendix H).

Participation was voluntary with each person/hospital contacted having the right to decline to take part or withdraw from the study at any time. Each

person or hospital received a letter outlining the study in which they were notified that they were not required to complete a consent form as completion of the questionnaire implied consent. Of paramount concern throughout this study was the protection of the privacy and rights of the respondents.

Anonymity was not always possible but confidentiality was assured. Anonymity could not be possible because of the need to obtain an adequate response rate, which necessitated a second mailing of the questionnaire to non-respondents.

Only designated researchers had access to the names of study participants. This information was kept at all times in a locked filing cabinet and the door of the room was locked whenever the researchers were absent. Names were only accessed for initial mailing out, and follow-up procedures, and to provide results of the study to all those participating. A summary of the special conditions laid down by the various committees are included in Appendix I.

4.6 Data Analysis

Data analysis was performed using a variety of methods and statistical tests. Frequencies and cross tabulations were undertaken using the SAS computer package (SAS Institute Inc., 1990). Descriptive tables are used to describe numbers and percentages relating to the prevalence of post-natal risk factor behaviours with regard to infant care practices of mothers, the advice/practice of child health nurses and midwives, and hospital policies. Similar methods are also used to describe the influencing factors contributing to the choice of

maternal infant care practices or the advice/practice of child health nurses and midwives. Coding guidelines were developed for each of the groups (appendices A, B, C, D, and E).

The Chi-squared Distribution (Bland, 1987) was used to test for significant differences between groups with regard to demographic information and response rates for the mothers. Comparisons between primiparous and multiparous women of demographic variables and of the prevalence of the risk factors was also carried out using the Chi-squared Distribution.

McNemar's test for paired proportions with continuity correction (Siegal & Castellan, 1988) was used to determine significant changes in the infant care practices of multiparous women between the index infant and the previous child. Epistat (Gustafson, 1984) software was used for the calculation of test statistics, odds ratios and confidence intervals. The Yates continuity correction was used as expected values for some variables were less than 20 (Bland, 1987). Previous children were also divided into two groups comprising those who were under two years of age and those who were two years of age or more at the time of the survey. Separate McNemar's tests were used to determine the significance of changes in infant care practices between the previous children of muitiparous women and their index infants for these two age groups. The available sample for the McNemar's tests is given on each table. A p-value of <0.05 was regarded as significant for all tests. The numbers in some tables vary (tables 28a, 29a and 30) because of unclear and/or missing data of the index infant and the previous child.

CHAPTER 5: RESULTS

5.1 Primiparous Women

Response Rates:

Of the 242 questionnaires posted to primiparous women, 193 were returned with answers, giving a response rate of 80% (see Table 1). The remaining 20% (n=49) of questionnaires were made up of 16% (n=38) who did not respond, 3% (n=8) unopened returns to sender, and 1% (n=3) who withdrew for personal reasons. Sixty four percent (n=154) of primiparous women responded to the first mail-out of the questionnaire. A further 7% (n=16) responded to the follow-up postal request, and 10% (n=23) responded to the telephone follow-up.

The group of 49 who did not respond included 6% (n=14) who had received a telephone follow-up, and 19% (n=24) who were either unable to be contacted or unavailable, were without a telephone, or the telephone had been disconnected. The remaining eleven comprised eight returns to sender and three withdrawals.

Demographic Information:

As for the multiparous women, demographic information for the total 242 primiparous women was obtained from the Midwives' Notification Forms which was recorded at the time of birth of the infant. These forms included details

regarding the mothers age, area of residence, race, marital status and sex of infant. The age of the mothers varied from 16 to 40 years with the largest number of mothers (n=85) aged between 25 and 29 years (see Table 1). Sixty nine percent (n=167) of the total sample of primiparous women resided in the metropolitan area, and 31% (n=74) resided in country or rural areas. The mother's racial group comprised 86% (n=209) Caucasian, 5% (n=21) Aboriginal, and 9% (n=21) 'other' (such as Asian, Polynesian or Arabic), and 1% (n=1) unclear or unavailable. Eighty percent of mothers (n=194) were married, with 20% (n=48) single. There were 125 (52%) female infants and 117 (48%) male infants. Significant differences between respondents and non-respondents were that non-respondents were more likely to be younger and of Aboriginal or 'other' descent (see Table 1). There were no significant differences in area of residence, marital status and sex of infant between respondents and non-respondents. However, the latter were more likely than the former to reside in the metropolitan area, to be unmarried and to have male infants.

There were four discrepancies in the matched demographic information of birth date of mother (n=2) and infant (n=2) between the midwive's forms and the questionnaire. In each instance, the dates noted by the mother on the questionnaires were taken as the true birth dates. Ages of the infants at the time of the questionnaire was approximately three months.

Table 1 Primiparous women
Demographic information - total sample, respondents and non-respondents

Demographic variables	Total mothers		Respondents		Non respondents	
	n	(%)	n	(%)	n	(%)
Age of mother (years)*						
Under 20	24	(9.9)	18	(9.3)	6	(12.3)
20-24	62	(25.6)	42	(21.8)	20	(40.8)
25-29	85	(35.1)	72	(37.3)	13	(26.6)
30-34	58	(24.0)	50	(25.9)	8	(16.3)
35-39	11	(4.6)	10	(5.2)	1	(2.0)
40+	1	(0.4)	1	(0.5)	0	(0.0)
Missing data	1	(0.4)	0	(0.0)	1	(2.0)
Total	242	(100.0)	193	(100.0)	49	(100.0)
χ^2=9.64, degrees of freedom=3, p=0.02						
Residence†						
Urban	167	(69.0)	131	(67.9)	36	(73.5)
Rural	74	(30.6)	61	(31.6)	13	(26.5)
Overseas	1	(0.4)	1	(0.5)	0	(0.0)
Total	242	(100.0)	193	(100.0)	49	(100.0)
χ^2=0.29, degrees of freedom=1, p=0.59						
Race of mother#						
Caucasian	209	(86.4)	177	(91.7)	32	(65.3)
Aboriginal	11	(4.5)	2	(1.0)	9	(18.4)
Other	21	(8.7)	14	(7.3)	7	(14.3)
Unclear	1	(0.4)	0	(0.0)	1	(2.0)
Total	242	(100.0)	193	(100.0)	49	(100.0)
χ^2=18.81, degrees of freedom=1, p<0.00001						
Marital status						
Single	48	(19.8)	34	(17.6)	14	(28.6)
Married	194	(80.2)	159	(82.4)	35	(71.4)
Total	242	(100.0)	193	(100.0)	49	(100.0)
χ^2=2.30, degrees of freedom=1, p=0.13						
Sex of Infant						
Male	117	(48.3)	89	(46.1)	28	(57.1)
Female	125	(51.7)	104	(53.9)	21	(42.9)
Total	242	(100.0)	193	(100.0)	49	(100.0)
χ^2=1.49, degrees of freedom=1, p=0.22						

Note χ^2 tests differences in the overall distribution of respondents and non-respondents

* 30-34, 35-39 and 40+ years added for χ^2 test, missing excluded
† Overseas excluded for χ^2 test
# Aboriginal and "other" added for χ^2 test, unclear excluded

Sleeping Position:

The most usual sleeping position used in the first three months for the infant was a non-prone position (94% (n=181), 6% (*n*=12) used the prone position, and 1% (n=2) had missing data (see Table 2).

Table 2
Most usual sleeping position used in the first three months of the infant

Sleeping position	Infants	
	n	(%)
Supine	71	(36.8)
Lateral	98	(50.8)
Supine and lateral	12	(6.2)
Prone	10	(5.9)
Missing	2	(1.0)
Total	193	(100.0)

A small group of infants had their sleeping position changed since birth by their mothers. Twice as many infants had been changed from the prone to a non-prone position compared to the group who were changed from non-prone to a prone position (see Table 3).

Table 3
Infants whose sleeping position has been changed by mother since birth

Sleeping position	n	(%)
Remained in the same position - non-prone	178	(92.2)
- prone	4	(2.1)
Changed position - non-prone to prone	3	(1.6)
- prone to non-prone	6	(3.1)
Missing	2	(1.0)
Total	193	(100.0)

* These infants may have changed positions from side to back but remained non-prone

Approximately half of the infants remained stable in one sleeping position during sleep periods (see Table 4). However, of the remaining 43% of those infants who altered position, 38% (n=73) rolled from lateral to supine and 2% (n=4) from supine to lateral. There was a small group of infants who managed major changes in their sleeping position (that is not changed by mother) from either non-prone to prone (3%, n=5), or from prone to non-prone (1%, n=1). It was not possible to determine the exact age at which these events occurred, although the infants were aged approximately three months at the time of the questionnaire. Where infants were in the lateral position it is not known if the lower arm was extended.

Table 4
Number (%) of infants who did/did not roll over in their sleep during the first three months of life (unable to determine exact age at which this event occurred)

Infant postural change during sleep periods	Infants	
	n	(%)
Remained stable		
- supine	68	(35.3)
- lateral	29	(15.0)
- supine/lateral	1	(0.5)
- prone	8	(4.2)
- supine/lateral to prone	0	(0.0)
Sub-total	**[106]**	**[55.0]**
Those who rolled over in their sleep		
- lateral to supine	73	(37.8)
- supine to lateral	4	(2.1)
- lateral to prone	3	(1.6)
- supine to prone	0	(0.0)
- supine/lateral to prone	2	(1.1)
- prone to lateral	0	(0.0)
- prone to supine	1	(0.5)
Sub-total	**[83]**	**[43.0]**
Unclear	2	(1.0)
Missing	2	(1.0)
Total	193	(100.0)

Medical and health factors of the infants were cited by 14 mothers as influencing the choice of infant sleeping position. Eleven of these mothers selected a non-prone position and three used the prone position. Colic and hip related problems were the two conditions for which the prone position was used although this use was not consistent between mothers. For the two infants with colic one used a non-prone position and one used the prone position. For infants with hip related problems, two slept in the prone position and two slept in a non-prone position.

In terms of the total number of citations the most important reinforcing factors or sources of information that influenced the mothers' choice of infant sleeping position were: the hospital midwife or nurse, the mothers own experience/ feelings, and books/pamphlets/talks or parenthood classes (see Table 5). The least helpful to mothers were doctors and community organisations.

Table 5
Total number of citations of important reinforcing factors and sources of information for primiparous women regarding sleeping position for the infant

Specific factors	n	(%)
Midwife or nurse at the hospital in which infant was born	126	(21.8)
Your own experience/feelings	94	(16.2)
Books, pamphlets, talks, or parenthood classes	88	(15.2)
Advice or example from family or friends	81	(14.0)
Media: TV, radio, newspapers or magazines	73	(12.6)
Child health nurses	52	(9.0)
Doctor, obstetrician, paediatrician or your GP	29	(5.0)
Community organisations (such as parent support or education groups)	5	(0.8)
"Other" factors defined by the mother Infant preference/comfort	8	(1.4)
Other miscellaneous influences	8	(1.4)
No answer	6	(1.0)
Missing data	9	(1.6)
Total	579	(100.0)

When simply ranking the three most important factors regarding sleeping positions for the infant, the two most important factors are the same as the first two factors obtained for the total number of citations. These are the hospital midwife or nurse and the mother's own experience. However, the third factor changes in importance and in this instance it is the media, rather than books/pamphlets/talks or parenthood classes (see Table 6).

Table 6
Major influencing factors with regard to choice of sleeping position for the infant in the first three months of life *(The figures below represent the number of primiparous women who nominated these factors)*

Most important influencing factors

Factors	n	(%)
Midwife or nurse at child's birth hospital	63	(32.6)
Own experience/feelings	42	(21.7)
Media (TV, radio, newspapers, magazines)	22	(11.4)
Combined total of other factors	66	(34.2)
Total	193	(100.0)

Breast feeding:

Ninety six percent (n=186) of primiparous women commenced breast feeding, with 4% (n=7) choosing to artificially feed. Duration of breast feeding for the infant is shown in table seven. Sixty five percent of primiparous mothers had completed three full months breast feeding or were still breast feeding their infant at the time of the questionnaire. In the first three months of life approximately one third (n=60) of mothers who commenced breast feeding had stopped completely.

Table 7
Duration of breast feeding for infant

Duration of breast feeding		n	(%)
Stopped breast feeding in	Week 1	15	(7.8)
	2	6	(3.1)
	3	5	(2.6)
	4	5	(2.6)
Stopped breast feeding after	Month 1	17	(8.8)
	2	12	(6.2)
Sub-total		**[60]**	**[31.1]**
Stopped breast feeding after	Month 3	126*	(65.3)
Never breast fed		7	(3.6)
Total		193	(100.0)

* Those infants who had completed three months or more breast feeding and those infants who were still breast feeding at the time of the questionnaire

Table eight further describes breast feeding behaviour in terms of those primiparous mothers who exclusively, mostly, or occasionally breast fed. Ninety two percent (n=116) of the 126 infants who were still breast fed at three months were exclusively or mostly breast fed, with only 4% (n=5) of the 126 infants occasionally breast feeding and unclear responses for a further five infants.

Table 8
Amount of breast feeding for the infant at approximately three months of age

Amount of breast feeding	n	(%)
Never breast fed	7	(3.6)
All breast feeds	92	(47.7)
Most breast feeds	24	(12.4)
Occasional breast feeds	5	(2.6)
Stopped breast feeding	60	(31.1)
Unclear	5	(2.6)
Total	193	(100.0)

In total the primiparous mothers cited 65 different contributing factors with respect to cessation of breast feeding (see Table 9). These mostly related to maternal and infant feeding problems (61% of all factors, n=40). Health factors related to the infant and the mother made up 32% (n=21), whilst maternal social reasons represented 6% (n=4).

Table 9
Major factors contributing to cessation of breast feeding with the infant

Factors	n	(%)
Low milk supply/infant feeding problems	28	(43.1)
Maternal feeding problems	12	(18.4)
Neonatal/infancy health related problems	9	(13.8)
Combined maternal/infant factors	8	(12.3)
Maternal social reasons	4	(6.2)
Maternal health	4	(6.2)
Total	65	(100.0)

By the age of 16 weeks, solids had been introduced to 38% (n=73) of infants (see Table 10).

Table 10
Age at which solids were introduced to infant

Commencement of solids		n	(%)
Solids commenced during week	4	2	(1.0)
	5	0	(0.0)
	6-7	5	(2.6)
	8-9	8	(4.1)
	10-11	9	(4.7)
	12-13	18	(9.3)
	14-15	24	(12.5)
	16+	7	(3.6)
Sub-total		**[73]**	**[37.8]**
No solids given		115*	(59.6)
Missing		5	(2.6)
Total		193	(100.0)

* those infants aged approximately three months or more who had not received solids at the time of the questionnaire

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced the mother's choice of type of feeding for her infant were: her own experiences/feelings, advice from family or friends, books/pamphlets/talks or parenthood classes, and hospital midwife or nurse (see Table 11). The least helpful were the media and community organisations.

Table 11
Total number of citations of important reinforcing factors and sources of information for primiparous women regarding breast feeding

Specific factors	n	(%)
Your own experience/feelings	156	(26.9)
Advice or example from family or friends	119	(20.7)
Books, pamphlets, talks, or parenthood classes	81	(14.0)
Midwife or nurse at the hospital in which infant was born	80	(13.8)
Child health nurses	47	(8.0)
Doctor, obstetrician, paediatrician, or your GP	38	(6.6)
Media: TV, radio, newspapers or magazines	22	(3.8)
Community organisations (such as parent support or education groups)	11	(1.9)
"Other" factors defined by mother No answer	17	(2.9)
Other miscellaneous influences	7	(1.2)
Unclear	1	(0.2)
Total	579	(100.0)

Maternal Smoking:

Twenty three percent (n=44) of the primiparous women smoked during the antenatal period of the infant, but this decreased to 18% (n=34) during the postnatal period (see Tables 12 and 13). There were few women who smoked 20 or more cigarettes a day.

Table 12
Number (%) of women who smoked in the antenatal period of infant

Smoking in antenatal period	n	(%)
Cigarettes per day 1-9	25	(13.0)
10-19	12	(6.2)
20+	6	(3.1)
Yes, unsure of number per day	1	(0.5)
Sub-total	**[44]**	**[22.8]**
No answer	1	(0.5)
Missing	3	(1.6)
Non smokers	145	(75.1)
Total	193	(100.0)

Table 13
Number (%) of women who smoked in the postnatal period of infant

Smoking in postnatal period	n	(%)
Cigarettes per day 1-9	14	(7.2)
10-19	15	(7.8)
20+	5	(2.6)
Yes, unsure of number per day	0	(0.0)
Sub-total	**[34]**	**[17.6]**
No answer	1	(0.5)
Missing	3	(1.6)
Non smokers	155	(80.3)
Total	193	(100.0)

Table 14 describes those women who gave up smoking during the antenatal period for the index infant, with 6% of smokers (n=12) giving up before 20 weeks gestation and 2% (n=3) stopping after 20 weeks gestation.

Table 14
Number (%) of mothers who gave up smoking during the antenatal period of infant

Antenatal cessation of smoking	n	(%)
Never smoked	145	(75.1)
Continued to smoke	28	(14.5)
Stopped before 20 weeks gestation	12	(6.2)
Stopped after 20 weeks gestation	3	(1.6)
Yes but gestation unclear	1	(0.5)
No answer	1	(0.5)
Missing	3	(1.6)
Total	193	(100.0)

Sixty seven percent of the 193 respondents, noted that there were no other household members who smoked whilst the mother was pregnant. Of the remainder, 2% did not answer and 31% reported that there were other smokers in the household. With regard to other household members smoking after the infant's birth, 77% of mothers reported that there were no other smokers in the household and 22% reported that there were other smokers (see Tables 15 and 16).

Table 15
Number (%) of mothers reporting smoking by other household members in the antenatal period of infant

Antenatal smoking (others)		n	(%)
Cigarettes smoked per day	1-9	19	(9.8)
	10-19	21	(11.0)
	20	19	(9.8)
Sub-total		[59]	[30.6]
No answer		1	(0.5)
Missing		3	(1.6)
No other smokers in household		130	(67.4)
Total		193	(100.0)

Table 16
Number (%) of mothers reporting smoking by other household members in the postnatal period of infant

Postnatal smoking (others)		n	(%)
Cigarettes smoked per day	1-9	16	(8.3)
	10-19	16	(8.3)
	20	9	(4.7)
Sub-total		**[41]**	**[21.3]**
No answer		1	(0.5)
Missing		3	(1.6)
No other smokers in household		148	(76.6)
Total		193	(100.0)

Although information was not specifically asked in the questionnaire there was one mother who chose to comment that one household member had given up smoking during the antenatal period. Also, there were no questions asking for information on whether smoking occurred either within the home or outdoors but seven mothers stated that they smoked outside postnatally, and for other household members, 9 smoked outside during the antenatal period, and 11 smoked outside during the postnatal period.

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced the mother's smoking patterns since she was first pregnant with this infant were: her own experience/feelings, books/pamphlets/talks or parenthood classes, and the media (see Table 17). The least helpful were the hospital midwife or nurse and community organisations.

Table 17
Total number of citations of important reinforcing factors and sources of information for primiparous women regarding cigarette smoking during the pregnancy and after the birth of the infant

Specific factors	n	(%)
Your own experience/feelings	113	(19.5)
Books, pamphlets, talks, or parenthood classes	64	(11.0)
Media: TV, radio, newspapers or magazines	63	(10.9)
Advice or example from family or friends	59	(10.2)
Doctor, obstetrician, paediatrician, or your GP	47	(8.1)
Child health nurses	14	(2.4)
Midwife or nurse at the hospital win which infant was born	11	(1.9)
Community organisations (such as parent support or education groups)	5	(0.9)
"Other" factors defined by mother No answer	142	(24.5)
Never smoked	37	(6.4)
Other miscellaneous influences	14	(2.4)
Missing	9	(1.6)
Unclear	1	(0.2)
Total	579	(100.0)

Dummy Use and Finger Sucking:

Approximately one third (n=58) of infants of primiparous women had not used dummies during the two weeks prior to receiving the questionnaire (that is, at approximately three months of age) (see Table 18). However, during that time 50% (n=97) used dummies for most or every sleep, with 18% (n=34) using them occasionally. A different pattern is evident for finger sucking, with under half (44%, n=85) of the mothers indicating that the infant had not finger sucked. The remaining group of infants sucked fingers during most or every sleep (17%, n=28), or on occasions only (36%, n=70).

Table 18
Infant dummy use and finger sucking during the previous two weeks

Infant	Dummy use		Finger sucking	
	n	(%)	n	(%)
No/never	58	(30.1)	85	(44.1)
Every sleep	36	(18.7)	5	(2.6)
Most sleeps	61	(31.6)	28	(14.5)
On occasions	34	(17.6)	70	(36.3)
No answer/unclear	1	(0.5)	2	(1.0)
Missing data	3	(1.5)	3	(1.5)
Total	193	(100.0)	193	(100.0)

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced dummy use or finger sucking for the infant were: the mother's own experience/feelings, advice from family or friends, and the hospital midwife or nurse. The least helpful were doctors, and community organisations (see Table 19). Twenty four percent of mothers cited infant's preference and comfort as important reasons for the use of dummy use and finger sucking.

Table 19
Total number of citations of important reinforcing factors and sources of information for primiparous women regarding dummy use and finger sucking for the infant

Specific factors	n	(%)
Your own experience/feelings	135	(23.3)
Advice or example from family or friends	109	(18.8)
Midwife or nurse at the hospital in which the infant was born	88	(15.2)
Books, pamphlets, talks, or parenthood classes	55	(9.5)
Child health nurses	44	(7.6)
Media: TV, radio, newspapers or magazines	15	(2.6)
Doctor, obstetrician, paediatrician or your GP	10	(3.3)
Community organisations (such as parent support or education groups)	4	(0.7)
"Other" factors defined by mother No answer	73	(12.6)
Infant preference/comfort	22	(23.8)
Other miscellaneous influences	6	(1.0)
Missing data	9	(1.6)
Total	579	(100.0)

In total there were missing data for two of the returned questionnaires as a result of the incorrect page six in the breast feeding section. As 89 mothers out of the total 193 mothers who responded, re-answered the section on breast feeding, it was possible to make a comparison between both groups of answers. There was excellent agreement between both sets of answers on page five. Some differences in responses were found for page seven related to influencing factors. Of these responses 41 mothers cited exactly the same influencing factors on both occasions, 37 cited two of the same influencing factors, nine cited only one of the same influencing factors, and two cited completely different influencing factors. Thus, 78 of the 89 mothers (88%) showed good agreement between the two different mail-outs. Some of the mothers did not rank these responses in the same order but this was not examined in detail as the prime focus in the analysis related to the total number of citations rather than ranking of the responses.

5.2 Multiparous women

Response Rates:

Of the 448 questionnaires posted to multiparous women, 349 were returned with answers, giving a response rate of 78%. The remaining 22% (n=99) of questionnaires were made up of 16% (n=73) non-responders, 4% (n=17) of unopened returns to sender and 2% (n=9) of women who chose not to answer because of language difficulties or other reasons. Fifty five percent (n=246) of multiparous women responded to the first mail-out of the questionnaire. A further 15% (n=67) responded after the follow-up postal request, and 8% (n=36) responded after the telephone follow-up.

The group of 73 who did not respond included 23 who had received a telephone follow-up, and 50 who were either unable to be contacted or unavailable, were without a telephone, or the telephone had been disconnected.

Demographic Information:

Some demographic information was available for the total 448 multiparous women on the Midwive's Notification Forms. This related to information recorded at the time of birth of the infant including details regarding the mothers' age, area of residence, race, marital status, and sex of the infant. The ages of the mothers ranged from 17 to 45 years, with the largest number of mothers (67%, n=299) aged between 25-35 years (see Table 20). Sixty eight percent (n=303) of the total sample of 448 multiparous women resided in

the metropolitan area, and 32% (n=145) resided in country or rural areas. The mother's racial group comprised 86% (n=387) Caucasian, 6% (n=28) Aboriginal, and 7% (n=29) 'other' (such as Asian, Polynesian or Arabic), and 1% (n=4) unclear or unavailable. Ninety percent of mothers (n=405) were married, with 9% (n=9) unmarried. There were 227 (51%) female infants and 221 (49%) male infants. Significant differences between respondents and non-respondents were that non-respondents were likely to be younger and of Aboriginal or 'other' descent.

The only demographic information asked for in the questionnaire related to the birth dates of the mother, the infant, the previous child, and also the date the questionnaire was completed. The birth dates of the mother and infant obtained from the 349 questionnaires were matched with the Midwives' Notification Forms. Three of the mothers' birth dates did not match, and in each instance the birth date noted on the questionnaire was taken as the true birth date. Infants' ages at the time of the questionnaire were approximately three months. The ages of the previous children were divided into two groups, those aged under two years at the time of the questionnaire (49%, n=168) and those aged two or more years (51%, n=176) in order to better estimate the impact of the RTR campaign on maternal behaviour. Previous children aged two years or more at the time of the questionnaire would have been babies before the campaign publicity commenced whereas the parents of children younger than two years may have been exposed to the RTR campaign before the birth of their previous child.

Table 20 Multiparous women
Demographic information - total sample, respondents and non-respondents

Demographic variables	Total mothers		Respondents		Non-respondents	
	n	(%)	n	(%)	n	(%)
Age of mother (years)*						
Under 20	9	(2.0)	4	(1.1)	5	(5.1)
20-24	65	(14.5)	37	(10.6)	28	(28.3)
25-29	135	(30.1)	107	(30.7)	28	(28.3)
30-34	164	(36.6)	143	(41.0)	21	(21.2)
35-39	58	(12.9)	46	(13.2)	12	(12.1)
40+	14	(3.2)	12	(3.4)	2	(2.0)
Missing data	3	(0.7)	0	(0.0)	3	(3.0)
Total	448	(100.0)	349	(100.0)	99	(100.0)
χ^2=30.88, degrees of freedom=3, p=<0.00001						
Residence						
Urban	303	(67.6)	239	(68.5)	64	(64.7)
Rural	145	(32.4)	110	(31.5)	35	(35.3)
Total	448	(100.0)	349	(100.0)	99	(100.0)
χ^2=0.36, degrees of freedom=1, p=0.55						
Race of mother†						
Caucasian	387	(86.4)	316	(90.5)	71	(71.7)
Aboriginal	28	(6.2)	9	(2.6)	19	(19.1)
"Other"	29	(6.5)	20	(5.7)	9	(9.1)
Unclear	4	(0.9)	4	(1.2)	0	(0.0)
Total	448	(100.0)	349	(100.0)	99	(100.0)
χ^2=38.3, degrees of freedom=2, p=<0.00001						
Marital status						
Single	41	(9.1)	27	(7.7)	14	(14.2)
Married	405	(90.4)	321	(92.0)	84	(84.8)
Unclear†	2	(0.5)	1	(0.3)	1	(1.0)
Total	448	(100.0)	349	(100.0)	99	(100.0)
χ^2=3.16, degrees of freedom=1, p=0.08						
Sex of infant						
Male	221	(49.3)	174	(49.9)	47	(47.5)
Female	227	(50.7)	175	(50.1)	52	(52.5)
Total	448	(100.0)	349	(100.0)	99	(100.0)
χ^2=0.09, degrees of freedom=1, p=0.76						

Note χ^2 tests differences in the overall distribution of respondents and non-respondents

* Under 20 and 20-24 years, and 35-39 and 40+ years added for χ^2 test, missing excluded
† Unclear excluded for χ^2 test

Sleeping Position:

The most usual sleeping position used in the first three months for the index infant was non-prone (86%, n=299), and 14% (n=49) used the prone position (see Table 21). The prone position was more common for the previous child (34%, n=120) compared to the index infant, and the supine position was less common for the previous child (9%, n=32) (see Table 21).

Table 21
Most usual sleeping position used in the first three months - infant and previous child

Sleeping position	Infant		Previous child	
	n	(%)	n	(%)
Supine	96	(27.5)	32	(9.2)
Lateral	196	(56.2)	189	(54.1)
Supine and lateral	7	(2.0)	7	(2.0)
Prone	49	(14.0)	120	(34.4)
Unclear	1	(0.3)	1	(0.3)
Total	349	(100.0)	349	(100.0)

There was a significant decrease in use of the prone sleeping position between the index infant and the previous child ($p<0.00001$) (see Table 22a). After dividing the previous children by age into those aged under two years and those two years and over, this decrease remained at the same level of significance for both groups (see Table 22 b,c). For the mothers with older previous children 30% had used the prone position for the previous child and the non-prone position for the current infant whereas 5% had used the non-prone position for the previous child and the prone position for the current child (see Table 22c).

Table 22
(a, b, c) Comparison of sleeping positions at approximately three months of age between index infant and previous child

(a) Total sample of index infants and all previous children (n=347 mothers)

Index Infant	Previous child			McNemar's Test
		Non Prone	Prone	
		n (%)	n (%)	χ^2=47.61, degrees of freedom=1, p<0.00001
	Non Prone	213 (61.4)	85 (24.5)	Odds Ratio 5.67, 95% Confidence Interval 3.09 to 10.73
	Prone	15 (4.3)	34 (9.8)	

(b) Sample of index infants and previous children aged under two years (n=168 mothers)

Index Infant	Previous Child			McNemar's Test
		Non Prone	Prone	
		n (%)	n (%)	χ^2=15.62, degrees of freedom=1, p<0.00001
	Non Prone	117 (69.6)	33 (19.6)	Odds Ratio 4.70, 95% Confidence Interval 1.88 to 13.16
	Prone	7 (4.2)	11 (3.6)	

(c) Sample of index infants and previous children aged two years and over (n=174 mothers)

Index Infant	Previous Child			McNemar's Test
		Non Prone	Prone	
		n (%)	n (%)	χ^2=30.81, degrees of freedom=1, p<0.00001
	Non Prone	93 (53.4)	52 (29.9)	Odds Ratio 6.50, 95% Confidence Interval 2.83 to 16.34
	Prone	8 (4.6)	21 (12.1)	

A small group of index infants (12%, n=40) had their sleeping positions changed since birth by their mothers. A larger proportion of infants had been changed from a non-prone to prone position compared to the group who were changed from prone to non-prone (see Table 23).

Table 23
Index infants whose sleeping position has been changed by mother since birth

Sleeping position	Index infant	
	n	(%)
Remained in the same position - non-prone*	289	(82.8)
- prone	20	(5.7)
Changed position - non-prone to prone	29	(8.3)
- prone to non-prone	9	(2.6)
Unclear	2	(0.6)
Total	349	(100.0)

* These infants may have changed positions from side to back but remained non-prone

Approximately half of the infants (56%, n=197) remained stable in one sleeping position during sleep periods (see Table 24). However of the remaining 43% of those infants who altered position (that is not changed by mother), 38% (n=134) rolled from lateral to supine, and 1% (n=1) from supine to lateral. There was a small group of infants who managed major changes in their sleeping position from either non-prone to prone (3%, n=9) or from prone to non-prone (2%, n=5). It was not possible to determine the exact age at which this event occurred, however the infants were aged approximately three months at the time of the questionnaire. Where infants were in the lateral position it was not known if the lower arm was extended.

Table 24
Number (%) of infants who did/did not roll over in their sleep during the first three months of life (unable to determine exact age at which this event occurred)

Infant postural change during sleep periods	Index infant	
	n	(%)
Remained stable		
- supine	92	(26.3)
- lateral	61	(17.4)
- supine/lateral	2	(0.6)
- prone	37	(10.6)
- supine/lateral/prone	5	(1.4)
Sub-total	**[197]**	**[56.3]**
Those who rolled over in their sleep		
- lateral to supine	134	(38.4)
- supine to lateral	1	(0.3)
- lateral to prone	**6**	**(1.7)**
- supine to prone	**1**	**(0.3)**
- supine/lateral to prone	**2**	**(0.6)**
- prone to lateral	**3**	**(0.9)**
- prone to supine	**2**	**(0.6)**
Sub-total	**[149]**	**[42.8]**
Unclear	3	(0.9)
Total	349	(100.0)

Medical and health factors of the infants were cited by 33 of the mothers as influencing the choice of infant sleeping position. Twenty six of these mothers selected a non-prone position and seven used the prone position. Reflux and vomiting related conditions, colic and hip related problems were the three conditions for which the prone sleeping position was used. For the 11 infants with reflux, only three used the prone position and the remaining eight used the supine position. For colic two infants slept prone, and for hip related problems only two infants slept prone and the other three slept supine.

Where medical conditions were cited as contributing to the choice of sleeping position for the previous child (n=22) only two conditions led to the choice of the prone position. For those infants with colic six used a non-prone position, and only one used the prone position. Similarly, in the second group, which suffered with reflux and vomiting related conditions, three infants slept in a non-prone position and only one in the prone position.

In terms of the total number of citations the most important reinforcing factors or sources of information that influenced the mothers' choice of infant sleeping position were: the mother's own experience/feelings, the media, and the hospital midwife or nurse (see Table 25). The factors for the previous child included the mother's own experience/feelings, the hospital midwife or nurse, and advice from family or friends (see Table 26). The least helpful to mothers with infants and also the previous child were the doctor or medical profession and community organisations.

Table 25
Total number of citations of important reinforcing factors and sources of information for multiparous women regarding sleeping position for the index infant

Specific factors	n	(%)
Your own experience/feelings	244	(23.3)
Media: TV, radio, newspapers or magazines	166	(15.9)
Midwife or nurse at the hospital in which infant was born	154	(14.7)
Advice or example from family or friends	128	(12.2)
Books, pamphlets, talks, or parenthood classes	122	(11.7)
Child health nurses	85	(8.1)
Doctor, obstetrician, paediatrician, or your GP	53	(5.1)
Community organisations (such as parent support or education groups)	14	(1.3)
"Other" factors defined by the mother Infant's preference/comfort	31	(3.0)
No answer	28	(2.6)
Other miscellaneous influences	22	(2.1)
Total	1047	(100.0)

Total number of citations of important reinforcing factors and sources of information for multiparous women regarding sleeping position for the previous child

Specific factors	n	(%)
Your own experience/feelings	227	(21.7)
Midwife or nurse at the hospital in which previous child was born	189	(18.1)
Advice or example from family or friends	153	(14.6)
Books, pamphlets, talks, or parenthood classes	130	(12.4)
Child health nurses	105	(10.0
Media: TV, radio, newspapers or magazines	101	(9.6)
Doctor, obstetrician, paediatrician, or your GP	49	(4.7)
Community organisations (such as parent support or education groups)	8	(0.8)
"Other" factors defined by the mother Previous child's preference/comfort	24	(2.3)
No answer	43	(4.1)
Other miscellaneous influences	14	(1.3)
Don't know	3	(0.3)
Total	1047	(100.0)

When simply ranking the three most important factors regarding sleeping positions for the infant and for the previous child the three most important factors are the same as the three first factors obtained for the total number of citations. For the previous child they are the mother's own experience, the hospital midwife or nurse and advice from family or friends. For the index infant the factors are the mother's own experience, the media and the hospital midwife or nurse. The major change between the previous child and index infant was that advice from family and friends were important for the former, whereas the media played an important role for the index infant (see Table 27 a, b).

Table 27

(a) Major influencing factors with regard to choice of sleeping position for the previous child in the first three months of life

(The figures below represent the number of multiparous women who nominated these factors)

Most important influencing actors	n	(%)
Own experience/feelings	106	(30.4)
Midwife or nurse at previous child's birth hospital	95	(27.4)
Advice or example from family or friends	41	(11.7)
Combined total of other factors	107	(30.7)
Total	349	(100.0)

(b) Major influencing factors with regard to choice of sleeping position for the index infant

(The figures below represent the number of multiparous women who nominated these factors)

Most important influencing factors	n	(%)
Own experience/feelings	131	(37.5)
Media (TV, radio, newspapers, magazines)	65	(18.6)
Midwife or nurse at infant's birth hospital	62	(17.8)
Combined total of other factors	91	(26.1)
Total	349	(100.0)

Breast Feeding:

Ninety two percent of multiparous women commenced breast feeding with their index infant (n=321) (one of these answers was unclear) and this percent was the same for the previous child. Sixty two percent of multiparous women (n=217) had completed three full months breast feeding or were still breast feeding their infants at the time of the questionnaire. A similar figure of 67% (n=234) was obtained for breast feeding for the previous child at approximately three months (see Table 28a). Additional information obtained for previous children indicated that 52% (n=182) were breast fed for longer than six months (see Table 28b).

Table 28
(a, b, c) Duration of breast feeding for index infant and previous child

(a)

Duration of breast feeding		Infant		Previous Child	
		n	(%)	n	(%)
Stopped breast feeding in Week	1	20	(5.7)	13	(3.7)
	2	7	(2.0)	4	(1.1)
	3	8	(2.3)	8	(2.3)
	4	9	(2.6)	6	(1.7)
Stopped breast feeding after month	1	41	(11.7)	37	(10.6)
	2	18	(5.2)	14	(4.0)
Sub-total		**[106]**	**[29.5]**	**[82]**	**[23.4]**
Stopped breast feeding after month	3	217*	(62.2)	23 211†	(6.6) (60.4)†
Unclear when stopped		1	(0.3)	5	(1.4)
Never breast fed		28	(8.0)	28	(8.0)
Total		349	(100.0)	349	(100.0)

(b)

Duration of breast feeding		Previous child	
		n	(%)
Stopped breast feeding after month	4	29	(8.4)
	6	60	(17.2)
	9	48	(13.8)
	12	53	(15.2)
	18	13	(3.7)
Stopped breast feeding after year	2	8	(2.3)
Total		211	(52.2)

* Those infants who had completed three months or more breast feeding and those infants who were still breast feeding at the time of the questionnaire

† Previous children who breast fed for at least four months (see Table b)

For multiparous women, comparisons were made between the index infant and the previous child for any breast feeding and for breast feeding at approximately three months. When comparing any breast feeding no significant differences were found between the infant and the previous child (p=1). For these mothers, 88.3% breast fed both babies, 4.9% did not breast feed either baby, 3.4% did not breast feed the previous baby but did the current baby, and 3.2% breast fed the previous baby but not the current baby. Also, when the mothers were divided into two groups according to the age of the previous child (those under two years of age and those two years and older), no significant differences were noticed in the commencement of breast feeding for mothers with a younger previous child (91% initiated breast feeding, n=153) compared to mothers with an older previous child (86%, n=151).

A significant decrease (p=0.03) was demonstrated in breast feeding of the index infant (at approximately three months of age) compared with the previous child (see Table 29a). Twenty four percent of mothers did not breast feed either the index infant or the previous child at three months, 55% breast fed both infant and previous child, 13% breast fed the previous child but not this infant, and 8% breast fed this infant but not the previous child. This represents a 41% decrease in the group who breast fed their previous child but did not breast feed the index infant.

There were no significant difference in the breast feeding behaviour of multiparous women between previous children and index infants when divided into two groups according to the age of the previous child (see Table 29 b,c). However, where the previous child was under 2 years, the decrease in breast feeding from a previous child to an index infant was almost significant (p=0.052) (see Table 29b). It should also be noted that 60% of this group of mothers were breast feeding both their previous children and their index infants at three months compared to 50% of the mothers with older previous children. This result is difficult to interpret as the study was designed using McNemar's test to ascertain *changes* in individual maternal behaviour between the total group of previous children and the index infants. Also, sample size was estimated specifically to examine changes in sleeping position rather than breast feeding or other factors. This use of McNemar's test did not examine differences in proportions of mothers breast feeding or not breast feeding both children.

Table 29
(a, b, c) Comparison of breast feeding of index infant and previous child at approximately three months

(a) Total sample of index infants and all previous children (n=343 mothers)

Index Infant	Previous Child			McNemar's test
		Breast feeding	Non Breast feeding	χ^2=4.44, degrees of freedom=1 p=0.03
		n (%)	n (%)	
	Breast feeding	187 (54.5)	27 (7.9)	Odds Ratio = 0.59 95% Confidence Interval, 0.34 to 0.99
	Non Breast feeding	46 (13.4)	83 (24.2)	

(b) Sample of index infant and previous children aged under two years (n=163 mothers)

Index Infant	Previous Child			McNemar's test
		Breast feeding	Non Breast feeding	χ^2=3.78, degrees of freedom=1 p=0.052
		n (%)	n (%)	
	Breast feeding	97 (59.9)	10 (6.1)	Odds Ratio = 0.45 95% Confidence Interval, 0.18 to 1.07
	Non Breast feeding	22 (13.5)	34 (20.9)	

(c) Sample of index infants and previous children aged two years and over (n=175 mothers)

Index Infant	Previous Child			McNemar's test
		Breast feeding	Non Breast feeding	χ^2=1.23, degrees of freedom=1 p=0.27
		n (%)	n (%)	
	Breast feeding	88 (50.3)	16 (9.1)	Odds Ratio = 0.67 95% Confidence Interval, 0.32 to 1.37
	Non Breast feeding	24 (13.7)	47 (26.9)	

Table 30 further describes breast feeding behaviour in terms of those multiparous mothers who exclusively, mostly or occasionally breast fed. Ninety five percent (n=207) of the 218 infants who were still breast fed at three months were exclusively or mostly breast fed, with 3% (n=6) occasionally breast feeding, and it was unclear for 2% (n=5). This information was not obtained for the previous child but Table 31 describes the types of milk given to previous children during the first six months of life.

Table 30
Amount of breast feeding for the index infant at approximately three months of age

Amount of breast feeding	n	(%)
Never breast fed	28	(8.0)
All breast feeds	184	(52.7)
Most breast feeds	23	(6.6)
Occasional breast feeds	6	(1.7)
Stopped breast feeding	103	(29.7)
Unclear	5	(1.3)
Total	349	(100.0)

Table 31
Types of milks given to previous children during the first six months of life

Types of milk	n	(%)
Breast milk only	150	(43.0)
Breast milk and artificial milk	171	(49.6)
Artificial milk only	28	(7.4)
Total	349	(100.0)

In total the multiparous mothers cited 107 different contributing factors with respect to cessation of breast feeding (see Table 32). These mostly related to maternal and infant feeding problems (66% of all factors, n=71). Health factors related to the mother and infant made up 20% (n=21) of the group, whilst maternal social reasons such as returning to work or convenience of baby sitting comprised the remaining 14% (n=15).

Table 32
Major factors contributing to cessation of breast feeding with the index infant

Factors	n	(%)
Low milk supply/infant feeding problems	53	(49.6)
Maternal feeding problems	18	(16.8)
Maternal social reasons	15	(14.0)
Combined maternal/infant factors	9	(8.4)
Neonatal/infancy health related problems	6	(5.6)
Maternal health	6	(5.6)
Total	107	(100.0)

By the age of 16 weeks, solids had been introduced to 30% (n=103) of index infants and 31% (n=108) of previous children (see Table 33a). Table 33b further describes the time span during which solids were introduced for the previous child.

Table 33
(a, b) Age at which solids were introduced to index infant and previous child
(a)

Commencement of solids		Infant		Previous child	
		n	(%)	n	(%)
Solids commenced during week	4	0	(0.0)	0	(0.0)
	5	1	(0.3)	3	(0.9)
	6-7	10	(2.9)	8	(2.2)
	8-9	9	(2.5)	4	(1.2)
	10-11	21	(6.0)	13	(3.7)
	12-13	27	(7.8)	22	(6.3)
	14-15	16	(4.5)	34	(9.7)
	16+	19	(5.4)	19	(5.5)
Sub-total		[103]	[29.4]	[108]	[30.9]
				241†	(69.1)
Unclear		2	(0.6)	5	(1.4)
No solids given		244*	(70.0)		
Total		349	(100.0)	349	(100.0)

(b)

Commencement of solids		Previous child	
		n	(%)
Solids commenced during month	5+	138	(39.5)
	6+	46	(13.2)
	7+	40	(11.5)
	8+	9	(2.6)
	9+	6	(1.7)
	10+	1	(0.3)
	11+	1	(0.3)
Total		241	(69.1)

* those infants aged approximately three months or more who had not commenced solids at the time of the questionnaire

† previous children where solids were introduced after the 17th week (see Table b)

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced the mother's choice of type of feeding for her infant were: her own experience/feelings, advice from family or friends, the hospital midwife or nurse, and books/pamphlets/talks or parenthood

classes (see Table 34). The factors for the previous child were the mother's own experience/feelings, advice from family or friends, books/pamphlets/talks or parenthood classes and child health nurses (see Table 35). The least helpful for the infant and previous child were the media, and community organisations.

Table 34
Total number of citations of important reinforcing factors and sources of information for multiparous women regarding breast feeding of the index infant

Specific factors	n	(%)
Your own experience/feelings	306	(29.2)
Advice or example from family or friends	160	(15.3)
Midwife or nurse at the hospital in which infant was born	130	(12.4)
Books, pamphlets, talks, or parenthood classes	128	(12.2)
Child health nurses	123	(11.7)
Doctor, obstetrician, paediatrician, or your GP	76	(7.2)
Media: TV, radio, newspapers or magazines	44	(4.2)
Community organisations (such as parent support or education groups)	11	(1.1)
"Other" factors defined by the mother No answer	51	(4.9)
Other miscellaneous influences	17	(1.7)
Unclear	1	(0.1)
Total	1047	(100.0)

Table 35
Total number of citations of important reinforcing factors and sources of information for multiparous women regarding breast feeding for the previous child

Specific factors	n	(%)
Your own experience/feelings	278	(26.6)
Advice or example from family or friends	213	(20.3)
Books, pamphlets, talks, or parenthood classes	153	(14.6)
Child health nurses	138	(13.2)
Midwife or nurse at the hospital in which previous child was born	87	(8.3)
Doctor, obstetrician, paediatrician, or your GP	58	(5.5)
Media: TV, radio, newspapers or magazines	34	(3.3)
Community organisations (such as parent support or education groups)	14	(1.3)
"Other" factors defined by the mother No answer	51	(4.9)
Other miscellaneous influences	20	(1.9)
Unclear	1	(0.1)
Total	1047	(100.0)

Maternal Smoking:

Approximately the same number of multiparous women smoked cigarettes during the antenatal period for the index infant (26%, n=92) as for the previous child (25%, n=88) (see Table 36). However, slightly fewer multiparous women smoked during the postnatal period of the index infant (23%, n=81) compared to the previous child (28%, n=99) (see Table 37).

Table 36
Number (%) of women who smoked in the antenatal period of infant and previous child

Smoking in antenatal period	Infant		Previous child	
	n	(%)	n	(%)
Cigarettes per day 1-9	30	(8.6)	40	(11.4)
10-19	36	(10.3)	24	(6.9)
20+	24	(6.9)	24	(6.9)
Yes, unsure of number per day	2	(0.6)	0	(0.0)
Sub-total	**[92]**	**[26.4]**	**[88]**	**[25.2]**
No answer	2	(0.6)	1	(0.3)
Non smokers	255	(73.0)	260	(74.5)
Total	349	(100.0)	349	(100.0)

Table 37
Number (%) of women who smoked in the postnatal period of infant and previous child

Smoking in postnatal period	Infant		Previous child	
	n	(%)	n	(%)
Cigarettes per day 1-9	20	(5.7)	34	(9.7)
10-19	32	(9.2)	34	(9.7)
20+	29	(8.3)	30	(8.6)
Yes, unsure of number per day	0	(0.0)	1	(0.3)
Sub-total	**[81]**	**[23.2]**	**[99]**	**[28.3]**
No answer	3	(0.9)	2	(0.6)
Non smokers	265	(75.9)	248	(71.1)
Total	349	(100.0)	349	(100.0)

When comparing the antenatal cigarette smoking behaviour of multiparous women for the index infant and previous child, no significant differences were found (p=0.73) (see Table 38a). For these mothers, during the antenatal period 21% smoked during the pregnancies of both babies, 70% did not smoke for either pregnancies, 5% did not smoke for the previous baby but did for the index infant, and 4% smoked for the previous child but not the index infant (see Table 38a). Similar non-significant results were obtained when the mothers were divided into two groups according to the age of the previous child (see Tables 38 b,c).

There was a significant decrease in the postnatal smoking of multiparous women with the index infant compared with the previous child (p=0.004) (see Table 39a). Twenty one percent of mothers smoked for both babies, 70% did not smoke for both babies, 2% did not smoke for the previous baby but did for the current baby, and 7% smoked for the previous baby but not the current baby (see Table 39a). This represents a 71% decrease in the group who previously smoked and now do not smoke.

Differences were observed when mothers were divided into two groups according to the age of the previous child, those under two years and those over two years of age. There was a significant decrease in postnatal smoking with the index infant compared to the previous child aged under two years (p=0.04) (see Table 39b). This represents a reduction of 80% in the group who previously smoked postnatally and now do not. No significant decrease

was observed in postnatal smoking with the index infant compared with the previous child aged over two years (p=0.09), however, smoking did decrease by 62% (see Table 39c).

Table 38
(a, b, c) Comparison of maternal smoking during the antenatal period of the index infant and the previous child

(a) Total sample of index infants and all previous children (n=345 mothers)

	Previous Child				McNemar's test
		Non Smoking		Smoking	
Index Infant		n	(%)	n (%)	
	Non Smoking	240	(69.6)	15 (4.3)	χ^2=0.12, degrees of freedom=1 p=0.73
	Smoking	18	(5.2)	72 (20.9)	Odds Ratio = 0.83 95% Confidence Interval, 0.37 to 1.84

(b) Sample of index infants and previous children aged under two years (n=168 mothers)

	Previous Child				McNemar's test
		Non Smoking		Smoking	
Index Infant		n	(%)	n (%)	
	Non Smoking	120	(71.8)	6 (3.6)	χ^2=0, degrees of freedom=1 p=1
	Smoking	5	(3.0)	36 (21.6)	Odds Ratio = 1.2 95% Confidence Interval, 0.27 to 5.59

(c) Sample of index infants and previous children aged two years and over (n=176 mothers)

	Previous Child				McNemar's test
		Non Smoking		Smoking	
Index Infant		n	(%)	n (%)	
	Non Smoking	117	(67.6)	8 (4.6)	χ^2=0.45, degrees of freedom=1 p=0.50
	Smoking	12	(7.0)	36 (20.8)	Odds Ratio = 0.67 95% Confidence Interval, 0.22 to 1.92

Table 39
(a, b, c) Comparison of maternal smoking during the postnatal period of the index infant and the previous child

(a) Total sample of index infants and all previous children (n=344 mothers)

Index Infant	Previous Child				McNemar's test
		Non Smoking		Smoking	
		n	(%)	n (%)	
	Non Smoking	240	(69.8)	24 (7.0)	χ^2=8.26, degrees of freedom=1 p=0.004
	Smoking	7	(2.0)	73 (21.2)	Odds Ratio = 3.43, 95% Confidence Interval, 1.31 to 9.89

(b) Sample of index infants and previous children aged under two years (n=166 mothers)

Index Infant	Previous Child				McNemar's test
		Non Smoking		Smoking	
		n	(%)	n (%)	
	Non Smoking	118	(71.1)	10 (6.0)	χ^2=4.08, degrees of freedom=1 p=0.04
	Smoking	2	(1.2)	36 (21.7)	Odds Ratio = 5.0 95% Confidence Interval, 0.88 to 66.28

(c) Sample of index infants and previous children aged two years and over (n=173 mothers)

Index Infant	Previous Child				McNemar's test
		Non Smoking		Smoking	
		n	(%)	n (%)	
	Non Smoking	119	(68.8)	13 (7.5)	χ^2=2.72, degrees of freedom=1 p=0.09
	Smoking	5	(2.9)	36 (20.8)	Odds Ratio = 2.60 95% Confidence Interval, 0.78 to 10.11

Table 40 describes those women who gave up smoking during the antenatal period for the index infant, with, 5% of smokers (n=14) stopping before 20 weeks gestation, and the remaining 1% (n=3) stopping after 20 weeks gestation.

Table 40
Number (%) of multiparous women who gave up smoking during the antenatal period of the index infant

Antenatal cessation of smoking	Women	
	n	(%)
Non smokers	255	(73.0)
Continued to smoke	75	(21.5)
Stopped before 20 weeks gestation	14	(4.0)
Stopped after 20 weeks gestation	3	(0.9)
No answer	2	(0.6)
Total	349	(100.0)

Sixty eight percent of the 349 respondents noted that there were no other household members who smoked whilst the mother was pregnant (see Table 41). Of the remainder, 2% did not answer and 30% reported that there were other smokers in the household. With regard to other household members smoking after the index infant's birth, 78% of mothers reported that there were no other smokers in the household and 21% reported that there were other smokers (see Table 42).

Table 41
Number (%) of multiparous women reporting smoking by other household members in the antenatal period of the index infant

Antenatal smoking (others)	Women	
	n	(%)
Cigarettes smoked per day 1-9	21	(6.0)
10-19	34	(9.7)
20+	49	(14.1)
Sub-total	[104]	[29.8]
No other smokers in household	238	(68.2)
Unclear	1	(0.3)
No answer	6	(1.7)
Total	349	(100.0)

Table 42
Number (%) of multiparous women reporting smoking by other household members in the postnatal period of the index infant

Postnatal smoking (others)		n	(%)
Cigarettes smoked per day	1-9	20	(5.7)
	10-19	22	(6.3)
	20+	30	(8.6)
Sub-total		[72]	[20.6]
Unclear		1	(0.3)
No answer		4	(1.1)
No other smokers in household		272	(77.9)
Total		349	(100.0)

Although information was not specifically asked in the questionnaire there were four mothers who chose to comment that four household members had given up smoking during the antenatal period. Also, there were no questions asking for information on whether smoking occurred either within the home or outdoors. Nine mothers stated that they smoked outside postnatally, and, for other household members, 18 smoked outside during the antenatal period, and 11 smoked outside during the postnatal period.

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced the mother's smoking patterns since she was first pregnant with the index infant were: her own experience/feelings, the media, and books/pamphlets/talks or parenthood classes (see Table 43). The least helpful were the hospital midwife or nurse and community organisations. No information was obtained regarding influences for the previous child.

Table 43
Total number of citations of important reinforcing factors and sources of information for multiparous women regarding cigarette smoking during the pregnancy and after the birth of the index infant

Specific factors	n	(%)
Your own experience/feelings	248	(23.7)
Media: TV, radio, newspapers or magazines	153	(14.6)
Books, pamphlets, talks, or parenthood classes	136	(13.0)
Advice or example from family or friends	111	(10.6)
Doctor, obstetrician, paediatrician, or your GP	89	(8.5)
Child health nurses	24	(2.3)
Midwife or nurse at the hospital in which the infant was born	16	(1.5)
Community organisations (such as parent support or education groups)	6	(0.6)
"Other" factors defined by the mother No answer	192	(18.3)
Never smoked	47	(4.5)
Other miscellaneous influences	24	(2.3)
Unclear	1	(0.1)
Total	1047	(100.0)

Dummy Use and Finger Sucking:

Approximately one third (34%, n=120) of infants of multiparous women had not used dummies during the two weeks prior to receiving the questionnaire (i.e. at approximately three months of age) (see Table 44). However, during that time 51% (n=177) used dummies for most or every sleep, with 15% (n=51) using them occasionally. A different pattern is evident for finger sucking, with over half (54%, n=186) of the mothers indicating that the infant had not finger sucked. The remaining group of infants sucked fingers during most or every sleep (9%, n=33), or on occasions only (37%, n=129).

Table 44
Index infant dummy use and finger sucking during the previous two weeks

Infant	Dummy use		Finger sucking	
	n	(%)	n	(%)
No/never	120	(34.4)	186	(53.5)
Every sleep	71	(20.3)	6	(1.7)
Most sleeps	106	(30.4)	27	(7.7)
On occasions	51	(14.6)	129	(37.0)
No answer/unclear	1	(0.3)	1	(0.3)
Total	349	(100.0)	349	(100.0)

Dummy use for the first six months of life of the previous child (see Table 45) showed that 42% (n=146) never used dummies, 50% (n=175) used dummies for every or most sleeps and 8% (n=27) used them on occasions. Finger sucking was less common, with 72% (n=252) of infants reported as never sucking fingers, 13% (n=44) sucking fingers for most or every sleep, and 14% (n=49) occasionally sucking fingers.

Table 45
Previous child dummy use and finger sucking in the first six months of life

Previous child	Dummy use		Finger sucking	
	n	(%)	n	(%)
No/never	146	(41.8)	252	(72.2)
Every sleep	95	(27.3)	25	(7.2)
Most sleeps	80	(22.9)	19	(5.4)
On occasions	27	(7.7)	49	(14.0)
No answer/unclear	1	(0.3)	2	(0.6)
Total	349	(100.0)	349	(100.0)

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced dummy use or finger sucking for the infant and also the previous child were: the mother's own experience/feelings, advice from family or friends, and the hospital midwife or nurse (see Tables 46 and 47). The least helpful factors for both infant and previous child were the doctor, and community organisations. For both the infant and the previous

child, 5% of mothers cited the infant's/previous child's preference and comfort as important reasons for the use of dummy use and finger sucking.

Table 46
Total number of citations of important reinforcing factors and sources of information for multiparous women regarding dummy use and finger sucking for the index infant

Specific factors	n	(%)
Your own experience/feelings	295	(28.2)
Advice or example from family or friends	189	(18.0)
Midwife or nurse at the hospital in which the infant was born	130	(12.4)
Books, pamphlets, talks, or parenthood classes	87	(8.3)
Child health nurses	72	(6.9)
Media: TV, radio, newspapers or magazines	29	(2.8)
Doctor, obstetrician, paediatrician, or your GP	27	(2.6)
Community organisations (such as parent support or education groups)	4	(0.5)
"Other" factors defined by the mother No answer	140	(13.4)
Index infant's preference/comfort	52	(5.0)
Other miscellaneous influences	21	(1.9)
Total	1047	(100.0)

Table 47
Total number of citations of important reinforcing factors and sources of information for multiparous women regarding dummy use and finger sucking for the previous child

Specific factors	n	(%)
Your own experience/feelings	266	(24.4)
Advice or example from family or friends	202	(19.3)
Midwife or nurse at the hospital in which the previous child was born	120	(11.5)
Books, pamphlets, talks, or parenthood classes	95	(9.1)
Child health nurses	86	(8.2)
Media: TV, radio, newspapers or magazines	15	(1.4)
Doctor, obstetrician, paediatrician, or your GP	25	(2.4)
Community organisations (such as parent support or education groups)	5	(0.4)
"Other" factors defined by the mother No answer	166	(15.9)
Previous child's preference/comfort	54	(5.2)
Other miscellaneous influences	14	(1.3)
Total	1047	(100.0)

5.3 Differences in Primiparous and Multiparous Women

Some differences were found between primiparous and multiparous women (see Table 48). Two demographic factors differed significantly between both groups of women in that primiparous women were significantly younger and more were unmarried than multiparous women.

Several differences were found with respect to infant care practices. A declining gradient in the use of prone sleeping was observed. Infants of primiparous women slept least in the prone position, followed by the index infants of mothers with younger previous children, and then by the index infants of mothers with older previous children. The greatest use of prone sleeping was reported for the previous child.

More primiparous than multiparous women chose the supine sleeping position for their infant. Significantly more multiparous women compared to primiparous women had changed their infants' sleeping position from non-prone to prone during the first three months of life.

With respect to the amount of breast feeding at approximately three months, significantly more infants of multiparous women were exclusively breast fed compared to infants of primiparous women. However, primiparous women introduced solids significantly earlier to their infants compared to multiparous women.

No significant differences between multiparous and primiparous women were found regarding maternal antenatal or postnatal smoking, smoking of other household members, or dummy use or finger sucking of infants.

Table 48
Comparisons in demographic information and infant care practices for infants of primiparous women and the index infants of multiparous women

Demographic features/infant care practices	Chi-square distribution
Demographic features	
Age distribution see Tables 1 and 20	**χ^2=52.81, degrees of freedom=5** **p<0.00001**
Marital status see Tables 1 and 20	χ^2=12.06, degrees of freedom=1 p=0.0005
Infant sex see Tables 1 and 20	χ^2=0.70, degrees of freedom=1 p=0.40
Infant care practices	
Most usual sleeping position see Tables 2 and 21	**χ^2=19.42, degrees of freedom=3** **p=0.0002**
Mothers who changed infant sleeping position in the first three months see Tables 3 and 23	**χ^2=6.01, degrees of freedom=1** **p=0.01**
Breast feeding at three months see Tables 7 and 28	$\chi^2$0.52, degrees of freedom=1 p=0.47
Amount of breast feeding at three months see Tables 8 and 30	**$\chi^2$9.82, degrees of freedom=4** **p=0.04**
Introduction of solids before 16 weeks see Tables 10 and 33	**χ^2=3.91, degrees of freedom=1** **p<0.05**
Maternal antenatal smoking see Tables 12 and 36	χ^2=0.68, degrees of freedom=1 p=0.41
Maternal postnatal smoking see Tables 13 and 37	χ^2=2.13, degrees of freedom=1 p=0.14
Other household members smoking (antenatal) see Tables 15 and 41	χ^2=0.04, degrees of freedom=1 p=0.85
Other household members smoking (postnatal) see Tables 16 and 42	χ^2=0.04, degrees of freedom=1 p=0.84
Dummy use see Tables 18 and 44	χ^2=0.80, degrees of freedom=1 p=0.37
Finger sucking see Tables 18 and 44	χ^2=3.31, degrees of freedom=1 p=0.07

5.4 Child Health Nurses and Midwives

Response Rates:

Child health nurses: The sample size for child health nurses was reduced from the original sample of 80 to 79 as two questionnaires were mistakenly opened and returned by the same child health nurse. The response rate for child health nurses was 81% (n=64) and 19% (n=15) did not respond. The sample is highly representative of practising child health nurses as it was selected from those nurses working specifically in child health clinic settings.

Midwives: The sample size for registered midwives practising in hospitals was reduced from 80 to 78 because two of the randomly selected midwives had also received and completed questionnaires directed to them as child health nurses. Of the sample of 78, 57 (73%) midwives responded, one midwife withdrew from the study, two questionnaires were returned to sender unopened as the address was incorrect, and the remaining 18 (22%) did not respond. The response rate of 73% is estimated from the total sample size of 78. The original sample of 80 midwives obtained from the NBWA was from a large population of 3857 registered midwives in WA. As there was no method in which to identify and select only practising midwives from the NBWA, the sample includes some midwives who were not practising in midwifery and or neonatal/paediatric settings. However, the sample of midwives is representative of the total population of registered midwives throughout WA, regardless of their current clinical practice or employment status.

The sample size for registered midwives practising independently was thirteen, of whom twelve responded making a response rate of 92%. As there were few differences between the responses of the two groups, both groups were treated as a single entity in the analysis, thus the total overall midwife sample was 91 people with an overall response rate of 76% (n=69).

Demographic Information:

Child health nurses: All respondents were currently practising as child health nurses with 59% (n=38) and 41% (n=26) located in metropolitan and rural areas respectively. The number of years since graduation in child health nursing varied from 1 to 30 years. Seventy percent (n=45) of child health nurses had experienced 6 or more years practice, 22% (n=14) had between three and five years practice, and 8% (n=5) had two or less years practice. The sample had been stratified according to the number of births in each Health Service Management Region in WA. Compared with the proportion of infants born to mothers in rural areas (31%) (Gee, 1992), there appeared to be a better response from rural midwives than from those located in the metropolitan area.

Midwives: Of the 69 midwives who responded to the questionnaire, 51% (n=35) were practicing in midwifery and neonatal settings, 17% (n=12) were independent midwives, 16% (n=11) were working in a combination of general and midwifery practice, 7% (n=5) were in general nursing, 5% (n=3) were working in child health and paediatric nursing, 3% (n=2) were not working and 1% (n=1) were working in management.

Sixty two percent of the midwives (n=42) were employed in the metropolitan area, 35% (n=24) were employed in rural areas, and 3% (n=2) were unemployed. The number of years since initial graduation in nursing varied from one to 33 years. Seventy percent (n=48) of the midwives had six or more years practice in maternity, paediatric and/or child health nursing. Of the remaining midwives, 17% (n=12) had between three and five years practice, and 13% (n=9) had two or less years practice.

It was not possible to ascertain the distribution of midwives' responses according to metropolitan and country areas compared to the total sample as there are no such published data available. However, the location of employment for midwives who responded to the questionnaire is closer to the distribution of births in WA than that obtained for responding child health nurses.

Sleeping Position:

The majority (90%, n=58) of child health nurses and midwives (90%,n=62) advised a non-prone sleeping position, with only 5% (n=3) of nurses and 6% (n=4) of midwives suggesting prone as an acceptable alternative. A further 5% (n=3) of nurses and 4% (n=3) of midwives advised that the prone sleeping position was appropriate only when supervised.

Forty nine percent (n=31) of child health nurses made mention of the suitability of the supine or the combination of the lateral and supine sleeping positions. The lateral position alone (supine not included) was cited by 45% (n=29), with a further 3% (n=2) advising non-prone, and 3% (n=2) advising the supine position but only under supervision. For midwives, 30% (n=21) mentioned the suitability of the supine or the combination of the lateral and supine sleeping positions. However, the lateral position alone (supine not included) was cited by 41% (n=28), with a further 13% (n=9) advising against the supine position, 4% (n=3) advising the supine position but only under supervision, and 13% (n=9) preferring the lateral sleeping position for small infants, and the supine sleeping position for the older infants.

The time frame in which child health nurses and midwives introduced their present advice strategy for infant sleeping position is listed in Table 49. More than half of both groups had initiated this advice strategy within the past two years.

Table 49
Time frame of changes in advice of child health nurses and midwives with regard to sleeping position

Time frame	Child health nurses		Midwives	
	n	(%)	n	(%)
During the past year	7	(10.9)	8	(11.6)
Between 1-2 years ago	31	(48.4)	31	(44.9)
Between 2-5 years ago	19	(29.7)	17	(24.7)
More than 5 years ago	4	(6.3)	13	(18.8)
Ongoing	2	(3.1)	0	(0.0)
Unclear	1	(1.6)	0	(0.0)
Total	64	(100.0)	69	(100.0)

In terms of the total number of citations the most important reinforcing factors or sources of information that influenced the child health nurses' current advice/practice for infant sleeping position were: journals, Health Department memoranda, books/pamphlets/brochures, and the media. For the midwives the important influencing factors were: journals, the media, and discussions with nursing colleagues, and books/pamphlets and brochures. The least helpful factors differed for child health nurses and midwives with doctors or medical profession, further study/education, and professional organisations being the least helpful for the former (see Table 50), and briefing from area/district/nurse manager, and professional organisations for the latter (see Table 51)

Table 50
Total number of citations of important reinforcing factors and sources of information for child health nurses regarding sleeping position

Sources of information	n	(%)
Journals	46	(18.0)
Health Department memorandum	40	(15.6)
Books, pamphlets, brochures	32	(12.5)
Media, TV, radio, newspapers or magazines	31	(12.1)
Community organisations (such as Nursing Mothers Association or other parent support groups)	25	(9.8)
Discussions with nursing colleagues	21	(8.2)
Briefing from area/district/nurse manager	16	(6.3)
Conferences	14	(5.5)
Personal/clinical experience	8	(3.1)
Doctors or medical profession	7	(2.7)
Further study/education (such as University or Lactation courses etc)	6	(2.3)
Professional organisations	4	(1.6)
No answer	6	(2.3)
Total number of citations	256	(100.0)

Table 51
Total number of citations of important reinforcing factors and sources of information for midwives regarding sleeping position

Sources of information	n	(%)
Journals	51	(18.5)
Media, TV, radio, newspapers or magazines	46	(16.7)
Discussions with nursing colleagues	36	(13.0)
Books, pamphlets, brochures	27	(9.8)
Doctors or medical profession	25	(9.0)
Personal/clinical experience	25	(9.0)
Health Department memorandum	19	(6.9)
Conferences	11	(4.0)
Further study/education (such as University of Lactation courses etc)	11	(4.0)
Community organisations, (such as Nursing Mothers Association or other parent support groups)	11	(4.0)
Briefing from area/district/nurse manager	9	(3.3)
Professional organisations	5	(1.8)
Total	276	(100.0)

Breast Feeding:

All child health nurses and midwives encouraged breast feeding. Changes in the advice given had occurred for 64% (n=41) of nurses and 62% (n=43) of midwives. This does not imply, however, that either group had not previously encouraged breast feeding but rather that the type and style of advice had changed.

The time frame in which the child health nurses and midwives introduced their present advice strategy for breast feeding is listed in Table 52, with about 45% of both groups initiating this advice strategy during the past 5 years.

Table 52
Time frame of changes in advice of child health nurses and midwives with regard to breast feeding

Time frame	Child health nurses		Midwives	
	n	(%)	n	(%)
During the past year	4	(6.3)	64	(8.7)
Between 1-2 years ago	5	(7.8)	4	(5.8)
Between 2-5 years ago	20	(31.2)	20	(29.0)
More than 5 years ago	31	(48.4)	38	(55.1)
Ongoing	3	(4.7)	1	(1.4)
Unclear	1	(1.6)	0	(0.0)
Total	64	(100.0)	69	(100.0)

In terms of the total number of citations the most important reinforcing factors or sources of information that influenced present advice/practice of child health nurses for breast feeding were: personal/clinical experience, community

organisations, books/pamphlets/ brochures, and discussions with nursing colleagues (see Table 53). Midwives, however, cited the following: personal/clinical experience, discussions with nursing colleagues, and journals (see Table 54). The least helpful for child health nurses were the media, and professional organisations. For midwives, the least helpful were doctors or medical profession, and professional organisations.

Table 53
Total number of citations of important reinforcing factors and sources of information for child health nurses regarding breast feeding

Sources of information	n	(%)
Personal/clinical experience	51	(19.9)
Community organisations (such as Nursing Mothers Association, or other parent support groups)	40	(15.6)
Books, pamphlets, brochures	34	(13.3)
Discussions with nursing colleagues	31	(12.1)
Articles in professional journals	30	(11.7)
Conferences	27	(10.0)
Further study/education (such as University, or Lactation courses etc)	23	(9.0)
Health Department memorandum	9	(3.5)
Briefing from area/district/nurse manager	4	(1.6)
Doctors or medical profession	2	(0.8)
Media: TV, radio, newspapers or magazines	2	(0.8)
Professional organisations, (such as ANF)	1	(0.4)
No answer	2	(0.8)
Total number of citations	256	(100.0)

Table 54
Total number of citations of important reinforcing factors and sources of information for midwives regarding breast feeding

Sources of information	n	(%)
Personal/clinical experience	62	(22.5)
Discussions with nursing colleagues	54	(19.5)
Articles in professional journals	35	(12.7)
Books, pamphlets, brochures	30	(10.9)
Community organisations, (such as Nursing Mothers Association, or other parent support groups)	29	(10.5)
Further study/education (such as University, or Lactation courses etc)	26	(9.4)
Conferences	17	(6.2)
Health Department memorandum	3	(1.1)
Media, TV, radio, newspapers or magazines	9	(3.2)
Briefing from area/district/nurse manager	7	(2.5)
Doctors or medical profession	3	(1.1)
Professional organisations, (such as ANF)	1	(0.4)
Total	276	(100.0)

Maternal Smoking:

With regard to child health nurses, all respondents (n=63) but one (question not answered) discouraged maternal smoking. Similarly, all midwives (n=68) but one (question not answered) discouraged maternal smoking. Two of the child health nurses qualified this advice indicating it was given only when the client was receptive. Fifty two percent (n=33) and 29% (n=20) of nurses and midwives respectively stated that their advice had changed. However, as with the issue of breast feeding, this change of advice does not imply that either group had not previously discouraged cigarette smoking, but rather that the type and style of advice had changed.

The time frame in which child health nurses and midwives introduced their present advice strategy for maternal smoking is listed in Table 55, with approximately two thirds of both groups initiating this advice strategy over five years ago.

Table 55
Time frame of changes in advice of child health nurses and midwives with regard to maternal smoking

Time frame	Child health nurses		Midwives	
	n	(%)	n	(%)
During the past year	1	(1.6)	2	(2.9)
Between 1-2 years ago	3	(4.7)	5	(7.3)
Between 2-5 years ago	16	(25.0)	16	(23.2)
More than 5 years ago	41	(64.0)	45	(65.2)
Ongoing	2	(3.1)	0	(0.0)
Unclear	1	(1.6)	1	(1.4)
Total	64	(100.0)	69	(100.0)

In terms of the total number of citations, the most important reinforcing factors or sources of information that influenced child health nurses' current advice/practice for maternal smoking, were: journals, books/pamphlets and brochures, personal/clinical experience, and community organisations, (see Table 56). For midwives the important influencing factors were: journals, personal/clinical experience, the media, and books/pamphlets/brochures. The least helpful factors for child health nurses and midwives were professional organisations and briefings from area/district/nurse manager (see Table 57).

Table 56
Total number of citations of important reinforcing factors and sources of information for child health nurses regarding maternal smoking

Sources of information	n	(%)
Journals	41	(15.2)
Books, pamphlets, brochures	39	(15.2)
Personal/clinical experience	36	(14.1)
Community organisations (such as Nursing Mothers Association, or other parent groups)	33	(12.9)
Conferences	26	(10.2)
Health department memorandum	20	(7.8)
Discussions with nursing colleagues	15	(5.9)
Further study/education (such as University, or Lactation courses etc)	14	(5.5)
Doctors or medical profession	13	(53.1)
Media, TV, radio, newspapers or magazines	6	(2.3)
Professional organisations, (such as ANF)	5	(1.9)
Briefing from area/district/nurse manager	2	(0.8)
No answer	6	(2.3)
Total number of citations	256	(100.0)

Table 57
Total number of citations of important reinforcing factors and sources of information for midwives regarding maternal smoking

Sources of information	n	(%)
Journals	50	(18.1)
Personal/clinical experience	46	(16.7)
Media, TV, radio, newspapers or magazines	42	(15.2)
Books, pamphlets, brochures	39	(14.1)
Doctors or medical profession	25	(9.1)
Discussions with nursing colleagues	22	(8.0)
Further study/education (such as University, or Lactation courses etc)	17	(6.1)
Health Department memorandum	13	(4.7)
Conferences	9	(3.3)
Community organisations (such as Nursing Mothers Association or other parent groups)	6	(2.2)
Professional organisations, (such as ANF)	2	(0.7)
Briefing from area/district/nurse manager	1	(0.4)
Total	276	(100.0)

Dummy use and Finger Sucking:

Child health nurses gave varying responses with regard to advice on dummy use with 50% (n=32) of them stating that it was their client's choice with respect to dummy use, whilst 36% (n=23) were ambivalent or offered conditional reasons for the use of dummies, 9% (n=6) discouraged them, and 3% (n=2) recommended dummy use. The response was unclear for one respondent (2%).

The advice provided by midwives regarding dummy use also varied, with 57% (n=39) of midwives stating that it was client choice with respect to dummy use, whilst 28% (n=19) were ambivalent or offered conditional reasons for the use of dummies, 13% (n=9) discouraged them, and 3% (n=2) recommended dummy use.

Thirty percent (n=19) of child health nurses and 35% (n=24) of midwives considered dummy use to be part of normal child development and that it helped to meet infant and maternal needs. However, 66% (n=42) of child health nurses and 55% (n=38) of midwives raised many concerns related to dummy use. They included nipple confusion, concealment of an underlying problem, delay in verbal communication or jaw formation, dental caries with 'honey use', unnecessary over-use and the need to limit duration and length of use. Of the remaining 4% for child health nurses, two included both positive and negative responses and one response was unclear. The remaining 10% (n=7) of midwives included one midwife who did not offer advice on the

subject, four who included both positive and negative responses and two whose responses were unclear.

With regard to finger sucking, 77% (n=49) and 58% (n=40) child health nurses and midwives respectively, stated that it was client choice and/or acceptable behaviour for the infant, 9% (n=6) and 10% (n=7) were ambivalent or offered conditional reasons for finger sucking, 8% (n=5) and 28% (n=19) discouraged finger sucking, 3% (n=2) and 3% (n=3) stated they offered no advice on this subject, and it was unclear for two (3%) and one (1%) of the respondents.

Fifty one percent (n=33) of child health nurses and 45% (n=31) of midwives considered finger sucking to be part of normal infant development. However, 41% (n=26) and 46% (n=32) of nurses and midwives respectively raised many concerns related to finger sucking such as: concealment of an underlying problem, problems with teeth and jaw formation, and the need to limit the duration and length of use. The remaining comments of child health nurses (8%, n=5) included two who had both positive and negative responses, one who provided no advice on the subject, and one unclear response. The remaining 9% (n=6) of responses of midwives one had both positive and negative responses, two did not provide advice on the subject, and it was unclear for three responses.

In respect to the disadvantages or otherwise of dummy use compared to finger sucking 8% (n=5) and 23% (n=16) of child health nurses and midwives respectively commented that dummy use was less preferable to finger sucking and harder to break the habit, whilst 8% (n=5) and 9% (n=6) offered the opposite advice.

5.5 Hospitals

Response Rate:

All hospitals in WA which received infant and maternity patients (n=85) were surveyed. Responses were received from 58% (n=49) of the hospitals. The mailed questionnaire initially received 27 responses and the telephone follow-up resulted in a further 22 responses. The hospitals which responded included eight of the ten (80%) metropolitan tertiary and departmental hospitals, five of the nine (56%) private hospitals (metropolitan and country), and 36 of the 66 (55%) regional and country hospitals. The overall response rate for metropolitan hospitals was 77%, and 53% from country hospitals.

Sleeping Position:

Specific advice: The majority of hospitals (76%, n=37) advised non-prone sleeping positions. Of the remaining hospitals, seven provided no information regarding advice or policy, three cited policies of other larger hospitals (it is unclear what this advice was, and only two hospitals included prone position as a possible sleeping position. Medical reasons for using prone sleeping were also included in the responses of six of the 49 hospitals.

The supine sleeping position or the combination of lateral and supine sleeping position, were specifically stated as a suitable sleeping position by only nine of all hospitals. However, a further seven hospitals cited the SIDS brochure which includes the supine position. Two hospitals advised against the supine position. The remaining hospitals omitted to specifically state the suitability or

not of the supine position. Of these, eight simply stated a non-prone position, twelve clearly stated the lateral position only, one hospital offered lateral position in one document and lateral and supine in another document, three followed policies of other hospitals and seven had no policies.

Policy: Nine hospitals had specific policies or guidelines regarding non-prone sleeping position of infants. Fourteen cited recent references or guidelines such as the SIDS Foundation brochure or the HDWA memoranda on infant sleeping position. Sixteen hospitals did not appear to have specific policies or guidelines. However of these, fourteen stated non-prone advice and two permitted the prone sleeping position. Three followed policies of other hospitals such as WA teaching or regional hospitals, and seven had no policies. Seven of the 49 hospitals also stated they were in the process of policy formulation.

Timing of policy/advice on sleeping position: Three hospitals had introduced advice on non-prone sleeping position prior to 1991, with a further five hospitals commencing after 1991. Twenty two hospitals cited recent non-prone references, and six appeared in line with current advice with regard to non-prone sleeping position. It was unclear for six of the hospitals when the advice was instituted, and the remaining seven hospitals were without policies.

Breast Feeding:

Advice/Policy: Approximately half of the hospitals (51%, n=25) had formal policies in place regarding breast feeding. However, a further six hospitals used the protocol guidelines of external agencies such as the Australian College of Midwives, the World Health Organisation, and the Nursing Mothers Association, and nine hospitals cited external handbooks/policies from WA teaching and regional hospitals. Of the remaining hospitals seven stated that they promoted breast feeding but did not provide any further information, and two hospitals did not have policies on breast feeding. Eleven of the 49 hospitals stated they were in the process of policy review and updating.

Timing of advice/policy on breast feeding: Sixteen hospitals introduced or have updated their policies on breast feeding since 1991, with a further thirteen initiating advice/policy between 1982-1990. From the given responses it was not possible to ascertain timing of advice regarding the remaining hospitals.

Maternal Smoking:

Advice/Policy: The majority (n=33, 67%) of hospitals provided specific advice or information to mothers/patients about the risks of cigarette smoking. It was difficult, however, to ascertain what formal policy/guidelines existed with regard to this advice. The responses included sixteen hospitals citing current references such as the Quit campaign or HDWA brochures, sixteen advised against cigarette smoking, two commented only on a 'no smoking policy' in the hospital, two did not answer, and thirteen hospitals had no policies.

Timing of advice/policy on maternal smoking: Five hospitals had instigated their current advice/policy with regard to maternal smoking since 1988, and a further fourteen cited recent references. It was not possible to ascertain timing of policy with regard to maternal smoking for the other hospitals.

CHAPTER 6: DISCUSSION

The aims of this study were to provide useful information related to the prevalence of infant care practices in WA. Three of these practices, infant prone sleeping, maternal smoking and lack of breast feeding have been identified as postnatal risk factors related to SIDS. The two most important aspects of this study were to obtain estimates of the prevalence of three postnatal risk factors for SIDS, and to collect information regarding possible changes over time in these risk factors between recently born infants and their earlier born siblings. This discussion will provide interpretations of the results, conclusions and implications, and recommendations for the future.

The PRECEDE/PROCEED model provided a cohesive and useful framework to explain diverse features related to the postnatal risk factors for SIDS. Using this model, maternal infant care practices, the advice/practice of child health nurses, and hospital policies were investigated within an epidemiological, behavioural and educational context.

6.1 Mothers

Prone Sleeping:

This study has demonstrated that in WA, for infants aged approximately three months, prone sleeping is used for 6% of infants of primiparous women and for 14% of infants of multiparous women. The overall proportion of 11% is higher than the proportion of 7% for the combined states in Australia in 1992 for prone sleeping of infants under six months of age (Castles, 1993a). The

pattern of reduced use of prone sleeping for first time parents was also demonstrated by de Jonge, Burgemeijer, Engelberts, Hoogenbcezem, Kostense and Sprij (1993). These authors suggest this is in part due to the greater receptiveness of first time parents to health promotion campaigns related to sleeping position and SIDS.

Recent research has identified substantial reduction in the use of infant prone sleeping position since the commencement of risk reduction campaigns related to SIDS (Spiers & Guntheroth, 1994; de Jonge, Burgmeijer, Engelberts, Hoogenboezem, Kostense & Sprij, 1993; Tuohy, Counsell & Geddis, 1993; Wigfield et al., 1992; Beal, 1988). A significant reduction in infant prone sleeping was obtained in this study from a proportion of 34% to 14% for mothers who had used the prone position for the previous child compared to the index infant. This study also demonstrated a greater use of prone sleeping for both index infant and previous child where the previous child was aged two years and over, compared to previous children aged under two years. The research by de Jonge et al. (1993) also found a greater use of the prone sleep position for older siblings or higher birth rank order and further suggests that in time this difference will not exist.

A further observation of the study shows that approximately 4% of all the infants achieved major changes in sleeping position from either a non-prone to prone or prone to non-prone. In a study from Holland, a slightly higher figure of 7% of infants under four months also achieved major positional change (Engelberts & de Jonge, 1990). Although only a small percentage of infants

achieve major position changes without assistance, the issue is important in light of Beal's (1991) work which demonstrated major positional change in SIDS infants from the lateral to the prone position.

A further aspect related to the decreased use of prone infant sleeping position is the adoption of the supine sleeping position. There was a substantial increase in supine sleeping for the index infant (28%) compared to the previous child (9%). An even higher use of supine sleeping position (37%) was obtained for the infants of primiparous women. In surveys conducted by Beal (1988) in South Australia in 1984 and 1988 there was little reported change in infant supine sleeping position (23% to 22% respectively). However, in that study, the alternative sleep position was lateral (from 38% to 51%) for those infants reported to have changed from prone to non-prone sleeping. For the whole of Australia, Castles (1993a) reports a proportion of 23% for the use of supine and 69% for lateral in infants aged under six months. In contrast, the lateral position is even more widely used in New Zealand (86.4%), with 4.8% prone, 1.3% supine and 7.5% no particular way (Tuohy, Counsell, & Geddis, 1993).

The presence of infant medical or health conditions did not increase the use of prone sleeping. It appears that for those conditions for which prone sleeping had previously been favoured or recommended on medical grounds, such as reflux and vomiting, colic, and hip related problems, alternative non-prone sleeping positions are now being used by the mothers.

Regarding influencing factors for multiparous women, it is important to note that the media was the second most important influencing factor for the index infant but not important for the previous child. Therefore it seems as if the RTR campaign has had an effect on influencing mothers choice of infant sleeping position.

Breast Feeding:

In contrast to sleeping position, there has been little change reported in the prevalence of breast feeding since the increased publicity in health promotion campaigns related to SIDS (Taylor, 1991). In this study, breast feeding is defined as any breast feeding, whether exclusive, mostly or occasionally. The study has demonstrated high proportions of commencement of breast feeding with 96% of primiparous mothers and 92% of multiparous mothers choosing to breast feed. In another study in WA conducted during 1993 and using samples from two hospitals, a similar pattern is evident although the proportion is lower, with 88% of primiparous women and 82% of multiparous women commencing breast feeding (J.A. Scott, personal communication, May 31, 1994).

In New South Wales, Redman, Booth, Smyth and Paul (1992) found that 21% of primiparous mothers had either not commenced or had stopped breast feeding when the infant was one week old. In contrast this study shows that 11% of primiparous women and 14% of multiparous women had either not commenced or had stopped breast feeding at the same stage. Redman et al. (1992) points out that the women in the study were generally from a higher

socioeconomic status, and were slightly older than the general age of women in the community in which the study was undertaken.

The proportions obtained in this study relating to lack of breast feeding at one month were 16% for primiparous women and 20% for multiparous women in WA. These proportions are greater that those in New Zealand which has shown a slight but not significant decrease from 14% to 11% in the lack of breast feeding for infants at one month of age since the commencement of the SIDS health promotion campaign (Scragg, Mitchell, Tonkin, Hassall, 1993).

Sixty five percent of primiparous women and 62% of multiparous women in this WA study had completed three months of breast feeding or were still breast feeding at the time of the questionnaire (approximately three months). These proportions differ with the other recent WA data (J.A. Scott, personal communication, May 31, 1994) which shows that 55% of primiparous women and 65% of multiparous women had completed three or more months of breast feeding. There was a significant difference in the age distribution of mothers responding to the two studies (χ^2=29.9, df=5, p<0.0001) with a greater proportion of younger women in the Scott study and less older women. This may have partly accounted for the differences in breast feeding at three months for primiparous mothers between the two studies.

There were some other sampling differences between both study groups of these mothers. This study included a random sample of all mothers who had given birth in WA in 1993, had a response proportion of approximately 79%,

and the data were collected retrospectively when the infant was approximately three months old. The Scott study included women who had given birth in two hospitals in WA during 1993. Both these hospitals were public hospitals situated in outer metropolitan areas with a 59% response proportion of the eligible mothers. However, a strength of the data from Scott's study is that the information was collected prospectively and thus not subject to potential recall bias.

The significant reduction of breast feeding at three months for multiparous women with the infant compared to the previous child was unexpected, particularly as the group of multiparous women who had the greatest reduction in breast feeding were those who had younger previous children. Recall bias relating to the length of time spent breast feeding the previous child may be an explanation, However, it is difficult to explain why recall bias may be affecting mothers with the younger group as opposed to the older group of previous children.

Solids were introduced prior to 14 weeks to 22% of the infants of primiparous women, 20% of index infants of multiparous women and 14% of previous children of multiparous women. By 16 weeks this had increased respectively to 38% for infants, 30% for the index infants and 31% for the previous child. The difference in proportions between the introduction of solids before 14 weeks to both groups of infants compared to the previous child may be due to a later introduction to the previous child or reflect recall bias. However, the difference in solids at 16 weeks of the primiparas' infants compared to the

multiparas' index infants and the previous children appears to suggest that women currently having their first babies are introducing solids earlier than women who had their first babies several years ago. In New South Wales 35% of infants received solids before the 13th week and 60% before or during the sixteenth week (Redman et al., 1992).

Overall the most common factors cited by all mothers with respect to the cessation of breast feeding included 74% with maternal and infant feeding problems, for example, poor or insufficient milk supply, hungry baby, and cracked nipples. A further 20% of primiparous women and 11% of multiparous women cited infant and maternal health problems such as prematurity, lactose intolerance of the infant, and medical conditions of the mother. Another 6% of primiparous women and 14% of multiparous women cited maternal social reasons which included the need to return to work, convenience of baby sitting or dislike of breast feeding. Redman et al. (1992) noted similar contributing factors with 51% of mothers stating maternal and infant feeding difficulties and another 11% citing maternal dislike of breast feeding.

With regard to influences of maternal attitudes to breast feeding, all mothers for all children cited similar influences in that mothers' own experience and feelings and advice/example from family or friends were of prime importance. The media appeared to have little importance in contrast to the factors influencing multiparous women with regard to prone sleeping of the index infant.

Cigarette smoking:

There was a small decrease in the number of mothers (combined primiparous and multiparous women) who do not smoke in the postnatal period (22%) compared to the antenatal period (26%). This same proportion (22%) was obtained by Redman et al. (1992) in New South Wales from mothers reporting cigarette smoking since birth. The proportion of postnatal cigarette smokers in this study and that of Redman's et al. (1992) is lower than proportions obtained in a nationwide survey by Hill, White and Gray (1991) who estimated the proportion of cigarette smoking of all women in Australia aged between 16 to 44 years to be 31%. Hill et al. (1991) also concluded that the prevalence of adult cigarette smoking throughout the nation was falling, however more so for men rather than women. Thirty three percent of women in the same age group as this study were smoking in 1982 (Hill & Gray, 1982).

For multiparous mothers it was interesting to observe that there was an increase in postnatal smoking (28%) compared to antenatal smoking (25%) for the previous child. This is in context to the overall reduction in postnatal smoking noted above, and suggests that the strong anti-smoking campaigns promoted in WA during recent years (including the RTR campaign) may have had an impact. This is further borne out by the mothers' responses to the question on factors which influenced their attitudes to smoking in which they cited the media was one of the major influences.

In addition to the above findings, there was a significant decrease in the postnatal smoking of multiparous mothers with their index infant compared to

their previous child, again underlying the probable impact of the health promotion campaigns. This decrease took place among mothers with younger and with older previous children.

There are few data available which describe the proportions of cigarette smoking for women during the antenatal period. However, data from the National Health Survey (Castles, 1993b) indicated that 38% of women with children (ages unstated for both) were smokers.

The results of this present study show that it is likely that child bearing women and women caring for infants and small children in WA smoke to a lesser extent than the general population of women in Australia in the same age group (Hill et al., 1991), and to a lesser extent than to women with children of all ages (Castles, 1993b).

An overall reduction in cigarette smoking was observed for other household members as 30% smoked in the antenatal period compared with 21% in the postnatal period. It is not possible to know if this reduction is due to other household members reducing cigarette smoking, or if there were fewer other household members who were smokers living with the mother in the postnatal period. However, this result again reinforces the probable impact of the anti-smoking messages, particularly with regard to smoking around infants. There may also be other factors contributing to this reduction in smoking such that it may be easier to give up in the postnatal period, or that mothers are smoking outside and not counting this as smoking when replying to the questionnaires.

Dummy Use and finger Sucking:

This study found similar proportions in dummy use between infants of primiparous women (68%) and multiparous women (65%). However, fewer of the previous children used dummies (58%). With respect to finger sucking, 7% more infants of primiparous women (53%) sucked fingers compared to infants of multiparous women (46%) and only 27% of previous children were reported to have sucked fingers. Several factors could contribute to the reported increased prevalence of dummy use and finger sucking with the index infant of multiparous women compared with their previous children. The first may relate to the greater time span i.e. the first six months, rather than the previous two weeks, for which the question related to previous children. However, it is likely that this would have indicated a greater prevalence for the previous children rather than a reduction in use in these behaviours. Another factor for the difference could relate to recall bias or there may be true changes in dummy use and finger sucking between different children of multiparous women.

A Medline search yielded little useful information regarding the prevalence of dummy use. Mitchell, Taylor, Ford et al. (1993) cited other studies reporting the prevalence of dummy use from 88% in Milwaukee in the United States of America to as low as 9% in New Zealand. In their case-control study, they stated that the dummy use of controls varied between 5% in southern New Zealand to 32% in northern New Zealand, indicating that there may be large differences in different groups of infants.

Influencing factors:

One major aim of this study was to identify the influencing factors mothers believe to be important when deciding on infant care practices. This knowledge is particularly relevant to health promotion campaigns. In summary the most important influencing factors were the mothers' experience and advice from family and friends for each topic in both mother groups. The hospital midwife was important for all mother groups regarding sleeping position, dummy use and finger sucking, and breast feeding, excepting breast feeding for mothers with previous children, in which the hospital midwife was replaced by the child health nurse. Books/pamphlets/parenthood classes were also important for all topics except in relation to sleeping position for primiparous women. For these primiparous women, the media was the most important influence for sleeping position, as it was for all mothers for maternal smoking.

The fact that primiparous women recorded the media as an important source of information with respect to sleeping position, as did multiparous women with their index infants, may be as a result of the RTR campaign. The multiparous women also cited books/pamphlets/parenthood classes as important sources which again may also reflect the impact of pamphlets produced by the SIDS Foundation as part of the RTR campaign.

The media is cited as also having influenced mothers' decisions on maternal smoking. It is not possible, however, to determine from where the media source originated. This could have been as a result of the anti-smoking 'QUIT' campaign, or a response to the message in the RTR campaign.

Differences in Primiparous and Multiparous Women:

The fact that primiparous women were significantly younger and more were unmarried than multiparous women is not unexpected and is in keeping with other WA data (Gee, 1993).

With respect to sleeping position, this study has demonstrated a declining gradient in the use of prone sleeping. The least use of prone sleeping is evident for the infants of primiparous women, followed by the index infant of mothers with younger previous children, and then by the index infant of mothers with older previous children, and finally the greatest use was reported for the previous child. Also of interest is the changing use of the supine position, with more primiparous than multiparous women choosing this sleeping position for their infant.

A further aspect related to sleeping position, is the significantly larger number of multiparous women who chose to change their infants' sleeping position from non-prone to prone. This could possibly be due to the fact that multiparous women are receiving the non-prone message whilst in hospital, however, once home with their infant a proportion of them revert to successful behaviours practiced with the previous child(ren). These mothers may also access infant health clinics less frequently and thus rely on their own previous experience.

These results support the important role of the RTR campaign has had in influencing mothers' choice of infant sleeping from prone to non-prone, and also with respect to the increased use of the supine position. The greater use

of exclusivity of breast feeding for multiparous women may be explained by the increased age and maturity of the multiparous mother as well as the experience gained with the previous child(ren). The earlier introduction of solids for the infants of primiparous women compared to the index infant of multiparous women cannot be explained by recall bias. However, this result does fit the previous significant result of more multiparous women exclusively breast feeding their index infants in comparison with primiparous women, and thus possibly having less requirement for food supplement.

Due to the printing error in the questionnaire and the subsequent re-answering of section three on breast feeding by 89 of the primiparous women, it was possible to test, in a limited way, the reliability of some of the mothers' responses. Approximately half (n=89) of the total number of primiparous women responding answered section three on two occasions. For these mothers, all questions were answered in a consistent way on page five, and 88% (n=78) achieved good agreement in the responses related to the influencing factors on page seven. The difference in responses between both pages most likely reflects the fact that page five asked for discrete information whilst page seven requested more general qualitative information from the mothers. The diverse nature of infant/breast feeding and also how the mother was feeling at the time of the questionnaire may have contributed to the variation in the choices of influencing factors. This small test indicates that in general the mothers' responses to breast feeding were reliable. It is not possible to say if this also indicates the reliability of the other sections of the questionnaire, however, it is unlikely that the mothers would answer the different sections of the questionnaire with varying degrees of candour. The

incorrect questionnaire and the subsequent extra request to primiparous women did not have an adverse effect on the outcome of the study. This is demonstrated by the fact that there was only a minimal amount of lost data and the response rate of the primiparous women was in fact marginally higher than that obtained for the multiparous women.

6.2 Child health nurses and midwives

Demographic issues:

Overall the response from child health nurses and midwives was satisfactory. Although there are differences in the sample characteristics of child health nurses and midwives, there were some similarities between both groups. Years of speciality experience in child health nursing and midwifery were similar, however, 11% of midwives were not employed in midwifery or neonatal/paediatric/children's nursing. The lack of published data regarding the characteristics of child health nurses and midwives working and or registered in WA makes comparison of the survey data with the total population difficult. However, it is considered that the sampling methods chosen ensured representation of all groups.

Sleeping Position:

Non-prone advice was the preferred position for child health nurses and midwives, with only a small number in both groups advising/approving infant prone sleeping. More child health nurses noted the suitability of supine sleeping. A possible reason for this may be that midwives often only have contact with the infant during the early postnatal stages, days 1-5 of the healthy infant's life. During this time, especially in the first few days post delivery, newborn infants often vomit or choke on mucous secretions. Child health nurses on the other hand have long term contact with more mature infants. A similar small number in both groups of nurses recommended supervision with the supine position. Their reasons for this was a consistent concern of the risk of aspiration of gastric fluids. Recent research, however, suggests that infant supine sleeping does not impose an increased risk of

SIDS (Beal & Porter, 1991; Engelberts at al., 1991; Gilbert-Barness & Barness, 1993).

Over half of both groups had changed their advice on sleeping position within two years. However, approximately one third of the respondents introduced this advice more than two years ago and in some cases more than five years ago. It is difficult to ascertain if recall bias is a factor for the group who had changed advice two or more years ago. It is possible, however, that they have responded in a proactive way to research findings or other factors such as the media related to sleeping position. Supporting the idea of a proactive response, Scott et al. (1993) found that health visitors in Scotland had initiated changes in advice regarding sleeping position, breast feeding, smoking and overheating and that this advice had been implemented before official recommendations had been issued.

These health visitors also cited journal articles, the mass media, a local SIDS project, and the district medical officers' circular as important influences. This WA study found similar results, however the factors varied in importance between child health nurses and midwives. The two most important factors for child health nurses were journals and the HDWA memoranda, and for midwives they were journals and the media. The third and fourth factors included books/pamphlets/brochures and the media for child health nurses, and discussions with nursing colleagues and books/pamphlets/brochures for midwives. This information provides an interesting insight as to the avenues to best promote continued information to both these groups. The media and pamphlets (components of the RTR campaign) appear to have had an effect

in heightening awareness about infant prone sleeping for child health nurses, and, possibly to a greater degree, for midwives. The HDWA memoranda, issued at the same time as the commencement of the RTR campaign, appear also to have had an important influence for child health nurses.

Breast Feeding:

As one would expect, all child health nurses and midwives promoted breast feeding. Although there had been changes in advice strategy for breast feeding it would appear that this reflects more an ongoing process of professional development and competency rather than a dramatic shift such as that seen for infant sleeping position.

The factor of personal/clinical experience was the most important for both child health nurses and midwives. After this, the important influencing factors were the same except they were cited in different orders of importance for child health nurses and midwives. Child health nurses cited community organisations, books/pamphlets/brochures, discussions with nursing colleagues, and journals, whereas midwives chose discussions with nursing colleagues, followed by journals, books/pamphlets/brochures, and community organisations. The difference in the order of important factors most likely reflects the difference in clinical and professional settings for both child health nurses and midwives to this important yet broad subject. Given the response of both groups it is likely that the RTR campaign has had very little impact in breast feeding advice strategies.

Maternal Smoking:

The issues related to maternal smoking are similar to breast feeding in that they have been issues that child health nurses and midwives have dealt with over a long period of time. This is reflected by the fact that over two thirds of the advice had commenced over five years ago. All the respondents in both groups discouraged maternal cigarette smoking.

Journals, books/pamphlets/brochures, personal/clinical experience, and community organisations were the four most important influencing factors related to cigarette smoking advice strategy for child health nurses. Midwives cited similar factors which included journals, personal/clinical experience, the media, and books/pamphlets/brochures. It is unlikely that the RTR campaign has had a direct effect on advice strategies relating to maternal smoking considering the timing of this advice mostly occurred over five years ago. Of interest is the role of the media for midwives, however, it is more likely that this relates to programmes such as the QUIT campaign rather than the RTR campaign.

Dummy use and finger sucking:

Child health nurses and midwives offered similar advice regarding dummy use, with approximately half stating it was client choice and the other half providing conditional or ambivalent responses. More than half of both groups also raised concerns about possible negative outcomes for this behaviour. A slightly different pattern was evident regarding finger sucking. Three quarters of child health nurses stated it was client choice or acceptable infant behaviour, whilst half of the midwives felt this way. Commenting on negative

outcomes, slightly more midwives than child health nurses made such comment. There was also a divergence of opinion regarding benefit or not of one behaviour over the other. It would appear from the responses that there are widely held and possibly contradictory beliefs held by child health nurses and midwives with respect to dummy use and finger sucking for infants. It is most likely that these opinions will also result in inconsistent advice being provided to mothers.

6.3 Hospitals

All hospitals accepting maternity and infant patients were surveyed. The overall response rate of 58% although less than for other groups of respondents has provided some insight into the current state of hospital policy in WA on infant sleeping position, lack of breast feeding and maternal smoking. As previously mentioned, some caution must be taken because of the variation in type of responses from the hospitals. The response rate was higher for the metropolitan tertiary and departmental hospitals (80%) compared to the response from private and country hospitals (56% and 55%). The results may also provide misleading information regarding policy/advice as the information was not analysed according to other important aspects of hospitals such as the number of beds and the number of staff. These variables may differ among those who responded and those who did not respond.

This study has demonstrated that the majority of hospitals in WA accepting maternity and infant patients have adjusted their advice on infant sleeping

position and now advise non-prone sleeping positions. Although only a small number of hospitals have formal policies in place advising against infant prone sleeping, it is evident that the majority of the other hospitals are following recent non-prone guidelines. This change in advice appears to have occurred commensurate with the commencement of the RTR campaign. The role of the SIDS Foundation's RTR campaign in conjunction with the HDWA memoranda on sleeping position appear to have had an important impact in this process of change.

Breast feeding issues are much broader and more complex than infant sleeping position and the responses from hospitals in relation to policy on this subject varied in both complexity and themes. The majority of hospitals had policies in place. Those who did not most often followed the policies of external bodies such as the World Health Organisation, the Nursing Mother's Association, or the policy/protocol of other hospitals. Introduction of these policies ranges from 1982 and many hospitals indicated they were in the process of policy review and update.

Policy on maternal smoking was the least developed in hospitals when compared to infant sleeping position and breast feeding. The influence of the Quit campaign, other HDWA literature on smoking, and the HDWA operational guidelines pertaining to a smoke free working/public environment appears to have had the most impact in determining the information related to the policy or advice of these hospitals.

CHAPTER 7: CONCLUSION

7.1 Summary of the Study

The major aim of the study was to investigate postnatal risk factors related to SIDS in WA. Information was collected from mothers who had recently given birth, child health nurses, midwives and hospitals.

The prevalence of infant prone sleeping in WA was 6% for infants of primiparous mothers and 14% for the index infants of multiparous mothers, with a combined total rate of 11% for all infants. A significant reduction in the use of prone sleeping was observed between index infants and the previous child. Commencement of breast feeding was similar for primiparous and multiparous women with 94% of mothers commencing breast feeding which by three months had reduced to 63%. A significant reduction in breast feeding was observed between the index infant and the previous child and this drop appears to have occurred mostly for women whose previous child was younger than two years. There was an overall small decrease in maternal smoking between the antenatal and postnatal periods and significantly less mothers smoked in the postnatal period of their recently born infants than their previous children. Smoking by other household members also appeared to have reduced in the postnatal period compared to the antenatal period. Approximately two thirds of mothers reported dummy use, and approximately one half reported finger sucking of the infant and index infant in the previous two weeks.

The mothers' own experience and advice from family and friends were the most important influencing factors that contributed to current choice of infant care practices. The media was important for all women regarding smoking and also for primiparous women and for multiparous women for index infants only with regard to sleeping position. Midwives were important influences for sleeping position, dummy use and finger sucking. For breast feeding midwives were important for the infant but child health nurses were important for the previous child. Books/pamphlets/parenthood classes also provided important influences for all topics except for sleeping position for primiparous women.

Almost all child health nurses and midwives recommended infant non-prone sleeping and they all supported breast feeding and discouraged cigarette smoking. There was wide divergence in their advice on dummy use and finger sucking. The timing of the advice on sleeping position generally occurred commensurate with the RTR campaign, whereas advice on the other subjects was either ongoing or implemented more than five years ago. Journals and books/pamphlets/brochures were important influencing factors for all three topics for child health nurses and midwives. Personal/clinical experience was important for both groups regarding breast feeding and maternal smoking but not sleeping position. With respect to sleeping position the media was also important for both groups, as well as the HDWA memoranda for child health nurses, and discussions with nursing colleagues for midwives. The media was also important regarding maternal smoking for midwives.

The majority of hospitals have policies in place for sleeping position and breast feeding, and to a much lesser degree for maternal smoking. Most hospitals now advise a non-prone sleeping position.

It would appear that the RTR campaign has had an important impact in changing mothers choice an health professional advice on infant sleeping position and it is likely that this campaign together with others has had some effect on cigarette smoking around infants. However, it is unlikely that the campaign has had any effect on the prevalence of breast feeding. Mitchell, Brunt and Everard (1994) suggest that the prone sleeping position is causally related to SIDS. The number of infants dying from SIDS in WA has decreased by half in the past two years (personal communication, C. Cooke, 2.5.94), and the results of this study indicate it is likely that the RTR campaign has been an important component of this outcome.

7.2 Strengths of the Study

The important strengths of this study arise from the representative samples of the five groups of respondents, the overall satisfactory response rates and the ability to test changes in infant care practices, particularly with respect to infant prone sleeping. Major aspects of the strengths are listed below:

* Random samples from the total WA population were obtained for mothers who had given birth in June, 1993, for child health nurses and for midwives.
* Inclusion of all relevant hospitals within WA.
* Excellent response rate from mothers so that the estimated sample sizes required were achieved.
* Obtaining information from mothers when their infants were of a similar age.
* Ability to test change in behaviour for individual mothers (longitudinal data).
* Provision of baseline data for maternal behavioural factors for which there is little or inadequate data in WA or Australia, such as proportion of mothers breast feeding, and antenatal and postnatal smoking.
* The data collected will provide useful comparisons on infant care practices currently being researched in other centres, both nationally and internationally.

7.3 Limitations of the Study

Mothers:

The demographic information shows that the total sample of both primiparous and multiparous mothers surveyed was representative of the total population of mothers giving birth in WA with regard to important features such as maternal age, area of residence, race and marital status (Gee, 1993). However, respondents significantly differed from non-respondents in terms of maternal age and racial descent. Thus, the survey responses include less young mothers and less Aboriginal and mothers of 'other' race than the total population. For example, the response rate for primiparous mothers aged 20-24 years was 68% compared with 92% for mothers aged 35 years and over. The results of the survey, therefore, may to be less applicable to these under-represented groups.

The sample of mothers was collected during the month of June in 1993 and thus may not be representative of mothers who gave birth in the other eleven months of the year. Also the questionnaire was received during the peak of winter, and thus the responses to the questions may also reflect specific infant care practices due to seasonal reasons. This is of interest as one of the characteristics of SIDS is the high peak during cold months of the year. However, it is unlikely that the specific factors researched would be greatly influenced by seasonal events.

The sample size was primarily designed to detect changes in prone sleeping between the index infant and the previous child as it was considered this was the most important factor to investigate. There were, however, more previous children aged under two years than expected. This did not affect the results with respect to prone sleeping, and a significant difference was obtained for both groups of previous children (those aged under and over two years). A significant difference was noted with respect to breast feeding but not when the previous children were divided by age. For maternal smoking, no significant results were obtained for antenatal smoking, but a significant reduction in postnatal smoking occurred compared to the previous child.

Important ethical considerations meant that some primiparous and multiparous women were excluded. These included those mothers whose recently born infant was stillborn, had died since birth or had been adopted. Mothers with multiple births were also excluded. Exclusions were also made for those multiparous women where any previous child was stillborn or had died since birth.

Although there was a representative sample of Aboriginal women in the study according to numbers in the total population, the sample size was very small. This study is therefore unable to provide any useful information in relation to infant care practices for this group.

A further important consideration in this study is the possibility of recall bias. This questionnaire was administered to mothers approximately three months

after the birth of their infant. Some of the questions contained within the questionnaire required retrospective data, for example, when breast feeding stopped, or the number of cigarettes smoked during the antenatal period. Additionally, retrospective questions were asked about the previous child. In a similar manner, the timing of advice given by child health nurses and midwives may also be subject to recall bias.

Child Health Nurses and Midwives:

The samples of both these groups were obtained using different methods and thus different sample characteristics exist between the two groups. It was not possible to use the same methods to select these samples, although this was the original intention of the researcher. It is therefore unreasonable to attempt comparisons between the groups.

Hospitals:

A pilot study was not undertaken for this section of the project. This was because all hospitals accepting infant and maternity patients were included in the major study and it would have biased the results to also include them in a pilot study. It is possible that the questionnaire may have been understood differently by the staff at individual hospitals. The questionnaire asked for copies of the hospitals' policies on each of the three postnatal risk factors. Although many hospitals stated that they did not have *formal* policies, they provided supporting guidelines or information such as the SIDS brochure, the anti-smoking QUIT campaign, or HDWA memoranda. Thus, caution should be taken when interpreting those hospitals who stated they were without policies. It is possible that, although they did not have policies per se, they did have appropriate guidelines in operation.

7.4 Actions and Recommendations Arising from the Study

The findings from this study have provided valuable information about postnatal risk factors related to SIDS. Listed below are the immediate actions to be taken and also recommendations for future research.

Immediate Actions

* Report the findings of this study to the Health Department of Western Australia, the Nurses Board of Western Australia, the Regional Directors of Community Nursing, and the Midwives in Private Practice group.

* Recommendation be made to the SIDS Foundation and the Health Department of Western Australia that campaigns such as the RTR continue to be reinforced, monitored and evaluated.

* Dissemination of the findings of the study to community organisations such as the SIDS Foundation, professional nursing groups, hospitals throughout WA, mothers, and child health nurses and midwives participating in the study.

Recommendations for Further Research

* Although this study answered the significant questions posed by the study there are additional data that could be used for further sub-analysis which could tease out further study questions that may be worth investigating.

* Special surveys/studies of Aboriginal women and women of other racial and ethnic backgrounds in conjunction with their communities to describe infant care practices.

* Special surveys to address particular needs of some women such as young women or women with multiple births.

* Monitoring of these infant care practices on a regular basis, particularly with respect to cigarette smoking such as the number of smokers in the household, and people smoking outdoors only.

* Surveys which include samples of women giving birth over a full year.

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APPENDICES

APPENDIX A

The Western
Australian
Research
Institute for
Child Health Ltd

A request to mothers who have recently given birth to a baby to participate in a research project.

Dear new mother,

We would like to invite you to take part in a study that is looking at some everyday activities of parents in caring for their newborn babies. We are asking about how parents position their newly born children to sleep, how they feed them, dummy and finger sucking, and information about smoking. A further aim is to discover the sources which parents believe provide helpful information about caring for their children.

The study is co-ordinated through the Western Australian Institute for Child Health (WARICH) and Edith Cowan University (ECU).

A random selection of mothers has been chosen from birth information held by the Health Department of Western Australia. In releasing this information, the Commissioner of Health has agreed that this research will provide a valuable benefit to the community. The researchers will adhere to strict confidentiality guidelines and will protect the privacy of all people participating in the study.

Participation is voluntary. However, it is important that we receive as many responses as possible and we value your participation in the study. We believe the information provided by the project will contribute to a better understanding of maternal and child health.

The questionnaire will take about 15 minutes of your time to complete. We welcome any questions you may have about this study, so please feel free to contact Ann Callaghan during office hours on (09) 340 8680.

Thank you for your help.

Yours sincerely,

Ann M. Callaghan
Registered Midwife
(Honours candidate, ECU)

Professor Fiona Stanley
Director, WARICH
Professor of Paediatrics,
University of Western
Australia.

Dr. Anne Read
Research Officer

Registered Office:
Princess Margaret Hospital
for Children,
Roberts Road,
Subiaco, W.A. 6008
Telephone: (09) 382 8222
Facsimile: (09) 388 1171
Telex: AA93402

Postal Address:
GPO D184, Perth WA 6001
Registered Office:
Princess Margaret Hospital for Children
Roberts Rd, Subiaco WA 6008
Telephone: (09) 3408533
Facsimile: (09) 3883414

Please do not write in this column

/ 1-4

QUESTIONNAIRE INSTRUCTIONS

This questionnaire is divided into four sections. There are a number of similar questions, but we ask that you complete all questions.

In most cases please answer by using a tick ☑ in the box.

Tick only ONE box unless otherwise asked.

There is no need for your name. We would like, however, your date of birth and the date of birth of your baby.

Date of birth of Mother 5-10

Date of birth of your baby 11-16

Age of your baby now .....weeks 17-18

Date questionnaire completed .....

Please do not write in this column

SECTION ONE - BABIES SLEEPING POSITION:

1 [ ] [ ] [ ] 19-22

Q1. In what position did your baby usually sleep during the last month? [ ] 23

On his/her back..... ☐
On his/her side ☐
On his/her tummy ☐

Q2. Has this position been the same since your baby's birth?

Yes ☐→ Go to Q5.
No ☐
↓

Q3. In what position did your baby previously sleep? [ ] 24

On his/her back ☐
On his/her side ☐
On his/her tummy ☐

Q4. What was your baby's age when his/her sleeping position last changed? [ ][ ] 25-26

.....days, ...weeks or .....months

Q5. Does your baby change position when sleeping or when placed in a cot or bassinet to sleep?

No ☐→ Go to Q7.
Yes ☐
↓

Q6. If your baby does change positions during sleep, what position does he/she most often change to? [ ] 27

On his/her back ☐
On his/her side ☐
On his/her tummy ☐

Q7. Has your your baby had a medical condition that required you to position him/her for sleep in a particular way? [ ] 28

No ☐
Yes ☐ Please Describe:.....

.....

Please do not write in this column

Q8. Please indicate the three most important factors or sources of information which influenced you to choose the present sleeping position for your baby.

To do this, place a number (1, 2 or 3) in **three of the boxes** below so that:

1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank

29-32 33-34 35-36 37-38

* Advice or example from family or friends ☐
* Books, Pamphlets, Talks, or Parenthood Classes ☐
* Child Health Nurse ☐
* Doctor, Obstetrician, Paediatrician or your GP ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Midwife or Nurse at the hospital in which your baby was born ☐
* Organisations (such as parent support or education groups) ☐
* Your own experience/feelings ☐
* Other, please describe: ☐

.....

Please do not write in this column

SECTION TWO - ABOUT DUMMY USE AND INFANT FINGER SUCKING:

39-42

Q1. During the last two weeks, has your baby used a dummy when asleep or when placed down to sleep? 43

No ☐→ Go to Q3.

Yes ☐

↓

Q2. How often has your baby used a dummy when asleep or when placed down to sleep during the past 2 weeks?

For every sleep ☐

For most sleeps ☐

On occasions ☐

Q3. During the last two weeks, has your baby sucked on his/her fingers or thumb when asleep or when placed down to sleep? 44

No ☐→ Go to Q5.

Yes ☐

↓

Q4. How often has your baby sucked his/her fingers when asleep or when placed down to sleep during the past 2 weeks?

For every sleep ☐

For most sleeps ☐

On occasions ☐

Q5. Please indicate the three <u>most</u> important factors or sources of information which influenced dummy use or finger sucking for your baby.
To do this, place a number (1, 2 or 3) in <u>three of the boxes</u> below so that:

1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank 45-46

* Advice or example from family or friends ☐ 47-48
* Books, Pamphlets, Talks, or Parenthood Classes ☐ 49-50
* Child Health Nurse ☐
* Doctor, Obstetrician, Paediatrician or your GP ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Midwife or Nurse at the hospital in which your baby was born ☐
* Organisations (such as parent support or education groups) ☐
* Your own experience/feelings ☐
* Other, please describe: ☐

.....

Please do not write in this column

SECTION THREE - FEEDING YOUR BABY

1 45-48

Q1. Have you breast fed your baby at any time?

No ☐→ Go to Q5. 49

Yes ☐

↓

Q2. Are you still breast feeding your baby? (Tick only ONE box) 50

Yes, all feeds ☐

Yes, most feeds ☐ →Go to Q5.

Yes, on occasions ☐

No ☐

↓

Q3. How old (in days, weeks, or months) was your baby when you stopped breast feeding? 51-52

.....days, ...weeks, or .....months

Q 4. Can you say why you stopped breast feeding? Please describe: 53

.....

.....Go to Q7

Q5. Has your baby been given any milk other than breast milk? 54

No ☐→ Go to Q10.

Yes ☐

↓

Q6. Can you say why you introduced milks other than breast milk to your baby? 55

.....

.....

Q7. How old (in days, weeks, or months) was your baby when milk <u>other</u> than breast milk was given for the first time? 56-57

.....days, ...weeks, or .....months

Please do not write in this column

58-61

Q8. What milk(s) have you fed your baby (Please tick any appropriate answers) 62

- Breast milk ☐
- Formula ☐ Which brands?.....
- Cow's milk ☐
- Soy milk ☐
- Goat's milk ☐
- Other ☐ Please describe:.....

Q9. What milk(s) does your baby drink now? (Please tick appropriate answers) 63

- Breast milk ☐
- Formula ☐ Which brands?.....
- Cow's milk ☐
- Soy milk ☐
- Goat's milk ☐
- Other ☐ Please describe:.....

Q10. Have you given your baby solids (any food other than milk)?

- No ☐→ Go to Q12.
- Yes ☐↓

Q11. How old (in weeks) was your baby when solids were first introduced? 64-65

.....weeks

Q12. Has your baby had a medical condition that required you to feed him/her in a particular way? 66

- No ☐
- Yes ☐ Please describe:.....
.....

Q13. Have you (mother), had a medical condition or received treatment that affected how your baby was fed? 67

- No ☐
- Yes ☐ Please Describe:.....
.....

Please do not write in this column

1 68-71

Q14. Please indicate the three most important factors or sources of information which influenced you to choose the type of feeding for your baby.

To do this, place a number (1, 2 or 3) in three of the boxes below so that:
1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank 72-73

* Advice or example from family or friends 74-75
* Books, Pamphlets, Talks, or Parenthood Classes 76-77
* Child Health Nurse
* Doctor, Obstetrician, Paediatrician, or your GP
* Media: Television, Radio, Newspapers or Magazines
* Midwife or Nurse at the hospital in which your baby was born
* Organisations (such as parent support or education groups)
* Your own experience/feelings
* Other, please describe:

.....

Please do not write in this column

SECTION FOUR - ABOUT SMOKING CIGARETTES

78-81

Q1. Did you smoke during the time you were pregnant with this baby? 82

No ☐→ Go to Q5.

Yes ☐

↓

Q2. How many cigarettes did you smoke per day during your pregnancy?

.....per day.

Q3. Did you give up smoking cigarettes during the pregnancy of this baby? 83

No ☐→ Go to Q5.

Yes ☐

↓

Q4. How many weeks pregnant were you when you gave up smoking?

.....weeks pregnant.

Q5. Have you smoked since your baby was born? 84

No ☐→ Go to Q7.

Yes ☐

↓

Q6. How many cigarettes do you smoke a day now?

.....per day.

Q7. Did anyone else living with you smoke cigarettes during your recent pregnancy? 85

No ☐→ Go to Q9.

Yes ☐

↓

Q8. How much did they smoke? (If more than one other person at home smoked, please write the total number of cigarettes smoked)

.....per day.

Q9. Has anyone else living with you smoked cigarettes since your baby was born? 86

No ☐→ Go to Q11.

Yes ☐

↓

Q10. How many do they smoke now? (If more than one other person at home smokes, please write the total number of cigarettes smoked)

.....per day.

Please turn over to the last page for remaining questions:

Please do not write in this column

1 | | | | 87-90

Q11. Please indicate the three most important factors or sources of information which have influenced your smoking patterns since you were first pregnant with this baby.

To do this, place a number (1, 2 or 3) in three of the boxes below so that:
1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank

		91-92
* Advice or example from family or friends	☐	93-94
* Books, Pamphlets, Talks, or Parenthood Classes	☐	95-96
* Child Health Nurse	☐	
* Doctor, Obstetrician, Paediatrician, or your GP	☐	
* Media: Television, Radio, Newspapers or Magazines	☐	
* Midwife or Nurse at the hospital in which your baby was born	☐	
* Organisations (such as parent support or education groups)	☐	
* Your own experience/feelings	☐	
* Other, please describe:	☐	

.....

****

Thank you for your help and interest in completing this questionnaire.

Please return this questionnaire in the reply-paid envelope as soon as possible.

CODING GUIDE - PRIMIPAROUS WOMEN

Page 1 DEMOGRAPHIC INFORMATION

COLUMN

1-4 ID NUMBER (IDNO)	**1000 primips** 2000 multips 3000 midwives 4000 C.H.N. 5000 hospitals
5-10 Date of birth of **Mother**	dd mm yy -- -- -- (blank) missing information, unclear, no answer, lost to follow-up (ltfu)
11-16 Date of birth of **Baby**	dd mm yy -- -- -- missing
17-18 Baby age- matched with date questionnaire completed	-- missing/unable to ascertain 00 AGE IN WEEKS (see Formula "A" p.19)

Page 2 SECTION 1 - SLEEPING POSITION

19-22 IDNO	
23 **Q1** Babies usual sleeping position (SP = sleeping position)	- ltfu 0 1 back 2 side 3 tummy 4 back & side 5 side or back & tummy 7 no answer 8 don't know 9 unclear
24 **Q 2 & 3** Babies previous SP	- ltfu 0 1 YES 2 back 3 side 4 tummy 5 back & side 6 YES changed, but position unclear 7 no answer 8 don't know 9 unclear

Page 2 continued

25-26 **Q4**
Babies age when SP last changed

-- ltfu
00 N/A (YES to Q2)
NUMBER IN WEEKS (Formula "B" p.19)
77 no answer
88 don't know
99 unclear

---

27 **Q 5 & 6**
Does baby roll over or change SP

- ltfu
0
1 NO
2 back
3 side
4 tummy
5 back & side
6 back/side & tummy
7 no answer
8 YES, but position unclear
9 unclear

---

28 **Q 7**
Medical condition related to SP

- ltfu
0 raised cot with reflux
1 NO
2 colic
3 reflux/vomiting - mild/moderate/severe
4 hips
5 shoulder problems, Erbs palsy
6 chest infection/cold/snuffles/apnoea/monitor
7 no answer
8 other unspecified problems/surgery
9 unclear, can't remember

Page 3
29-32
IDNO

33-34 **Q8/1**
35-36 **Q8/2**
37-38 **Q8/3**
1st, 2nd, 3rd important influencing factors (inf/fac) related to babies SP (same answering structure for each of the sections)

-- ltfu
00
01-09 corresponding number
USE dice for multiple/ticked answers
55 no influences
77 no answer
88 don't know
99 unclear

OTHER answers provided by mother

10 religion
11 professional experience
12 specific SIDS information
13 (not used)
14 nurses at a transferred hospital
15 babies preference/comfort
16 specific medical treatment
17 (not used)
18 aware of SIDS,but baby comfort/needs/colic a priority
19 concern regarding vomiting and reflux
20 advice of a long time ago

Page 4 **SECTION 2 - DUMMY USE AND FINGER SUCKING (DUFS)**

39-42
IDNO

---

43 **Q 1 & 2**
Baby, dummy use
(DU = dummy use)

- ltfu
0
1 NO
2 every sleep
3 most sleeps
4 on occasions
5 co-sleeping or breast feeding
6 YES, but unclear how often
7 no answer
8 don't know
9 unclear

---

44 **Q 3 & 4**
Baby, finger sucking
(FS = finger sucking)

- ltfu
0
1 NO
2 every sleep
3 most sleeps
4 on occasions
5 co-sleeping or breast feeding
6 YES, but unclear how often
7 no answer
8 don't know
9 unclear

45-46 **Q5/1**
46-47 **Q5/2**
47-48 **Q5/3**
1st, 2nd, 3rd inf/fac
related to DUFS

-- ltfu
00
01-09 corresponding numbers
USE dice for multiple or unclear answers
55 no influences/ N/A /line through section
77 no answer
88 don't know
99 unclear

OTHER answers provided by mother

14 information regarding SIDS
15 babe preference/settles
16 question not answered but NO to Q 1 & 3
17 other mothers in hospital where baby born
18 nurses at transferred hospital
19 own schooling/education
20 didn't know it was important, no information regarding issue
21 medical condition (e.g., cleft palate)

Page 5 **SECTION 3 - BREAST FEEDING**
51-54
IDNC

---

55 **Q 1**
Have you breast fed baby

(BF= breast feeding)

- ltfu
0
1 NO
2 YES
7 no answer
8 don't know
9 unclear

Page 5 continued

56 **Q 2**
Still breast feeding baby

- ltfu
0 N/A (NO to Q1)
1 YES all feeds
2 most feeds
3 on occasions
4 NO
7 no answer
8 don't know
9 unclear

57-58 **Q 3**
Babies age when stopped BF

-- ltfu
00 N/A (NO to Q1) or (Y to Q2)
AGE IN WEEKS (formula "C" and/or "D" p.19)
77 no answer
88 don't remember
99 unclear

---

59 **Q 4**
Why stoped BF baby

- ltfu
0 N/A (NO to Q1 & Q5)
1 low/stopped milk supply,no milk at birth,not settle (hungry), poor weight gain,concern for baby,needed top-up,baby preference
2 maternal health/disability/illness/medication
3 maternal feeding difficulties, cracked/inverted nipples, mastitis abscess, oversupply,painful/uncomfortable, stress, worn out, post LUSCS or operation & delay in milk
4 maternal social-convenience/work/babysitting, contraception, preference/dislike, see if baby would like,not suitable to both
5 babe neonatal/health factors, fussy difficult feeder, refused breast, tongue tie/mouth problems, lactose intolerance
6 maternal & baby multiple factors
7 no answer
8 don't know
9 unclear

---

60 **Q 5**
Has other milk been given to baby

- ltfu
0
1 NO or "1" to Q2 (all feeds)
2 YES - or stopped BF
3 YES, on few occasions/periods only (i.e., sickness, to try)
7 no answer
8 don't know
9 unclear

---

61 **Q 6**
Why other milk was given to baby

- ltfu
0 N/A (NO to Q1 & Q5)
1 low/stopped milk supply, no milk at birth, not settle (hungry), poor weight gain, concern for baby, needed top-up, baby preference
2 maternal health/disability/illness/medication
3 maternal feeding difficulties- cracked/inverted nipples, mastitis, abscesses, oversupply, painful/ uncomfortable
4 maternal social - convenience/work/babysitting/ contraception, preference/dislike, to see in baby would like it, not suitable to both
5 babe neonatal/health factors, fussy difficult feeder, refused breast, tongue tie/mouth problems, lactose intolerance
6 maternal & baby multiple factors
7 no answer
8 don't know
9 unclear

Page 5 continued

62-63 **Q7**
Age other milk first given to baby

-- ltfu
00 N/A (NO to Q5)
AGE IN WEEKS (formula "C" and or "D" p.19)
77 no answer
88 don't know
99 unclear

Page 6
64-67
IDNO

---

68 **Q 8**
What milks have you given to baby

- ltfu
0
1 BF always (NO to Q5)
2 BF/AF (AF = artificially fed)
3 AF
7 no answer
8 don't know
9 unclear

---

69 **Q 9**
What milks do you give baby NOW

- ltfu
0 unanswered
1 BF always (NO to Q5)
2 BF/AF
3 AF
7 no answer
8 don't know
9 unclear

70-71 **Q 10 & 11**
Age solids given to baby

-- ltfu
00 NO, Never
AGE IN WEEKS (formula "C" and or "D" p.19)
77 no answer
88 don't know
99 unclear

---

72 **Q 12**
Baby medical condition affecting feeding type (for baby)

- ltfu
0
1 NO
2 neonatal problems/preterm, newborn illness, weight factors/small baby
3 vomiting, reflux
4 colic
5 infections/sickness
6 eczema/ family history eczema/allergies
7 no answer
8 other feeding problems, lactose intolerance
9 unclear, don't remember

Page 6 continued

73 **Q 13**
Mother medical condition affecting feeding type

- ltfu
0
1 NO
2 mastitis, breast abscess
3 irregular periods, contraception, subsequent pregnancy
4 YES, problems unclear
5 general infections/unspecified problems/psychiatric
6 rheumatoid arthritis, scoliosis
7 no answer
8 birth/postnatal problems/depression
9 unclear

Page 7

74-77
IDNO

78-79 **Q14/1**
80-81 **Q14/2**
82-83 **Q14/3**
1st, 2nd, 3rd, inf/fac related to BF

-- ltfu
00
01-09 corresponding number
USE dice for multiple/ticked answers
55 no influences
77 no answer
88 don't know
99 unclear

OTHER factors provided by mother

10 religion
11 professional experience
12 (not used)
13 research, personal/education
14 economics
15 babies preference/choice/need
16 to prevent allergies
17 no other choice, milk stopped/didn't come in, just happened that way
18 nurse at referred hospital
19 own education
20 teething, biting breast
21 hygiene
22 feeding difficulties, unable to feed

Page 8 **SECTION 4 - MATERNAL SMOKING**

84-87
IDNO

---

88 **Q 1 & 2**
Mother cigarettes per day during pregnancy

- ltfu
1 NO (none)
2 1-9 per day
3 10-19 per day
4 20 or more per day
6 YES, number unclear, can't remember/not stated
7 no answer
8 don't know
9 unclear

Page 8 continued

89 **Q 3 & 4**
Mother smoking did you give up during pregnancy

- ltfu
0 N/A (non smoker)
1 smoker who did not give up during pregnancy
2 Before 20 weeks
3 After 20 weeks
4 YES, but gestation not stated
7 no answer
8 don't know
9 unclear

---

90 **Q 5 & 6**
Mother smoking postnatal cigarettes per day

- ltfu
1 NO (none)
2 1-9 daily
3 10-19 daily
4 20 or more per day
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

---

91 **Q 7 & 8**
Smoking during pregnancy: other persons

- ltfu
1 NO
2 1-9 daily
3 10-19 daily
4 20 or more per day
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

---

92 **Q 9 & 10**
Smoking postnatal: other persons smoking

- ltfu
1 NO
2 1-9 daily
3 10-19 daily
4 20 or more daily
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

Page 9

93-96
IDNO

97-98 **Q11/1**
99-100 **Q11/2**
101-102 **Q11/3**
1st, 2nd, 3rd inf/fac related to MS

- ltfu
0
01-09 corresponding number
USE dice for multiple/ticked answers
55 no influences
77 no answer
88 don't know
99 unclear

(Question 11 continued - **continued from page 9**)

Other answers provided by mother

10 religion
11 research, personal/education
12 gave up some time ago
13 never smoked
14 economics
15 'NO' answer but NO smoking on Page 8
16 health related problems of others (e.g., husband)
17 gave up prior to pregnancy
18 gave up during pregnancy
19 abhors smoking near baby, would not harm baby
20 birth hospital policy of no smoking and subsequently has not recommenced smoking
21 stopped immediately knew was pregnant
22 nicotine/cigarette addiction-cravings unable to quit
23 patterns have not changed, not given up

ADDITIONAL DEMOGRAPHIC INFORMATION

103 **RESIDENCE**
locale where mother lives (by post code)

1 city
2 rural/country
3 out of state (inter state or overseas)
9 unclear on MNS (midwives) form

104 **MARITAL**
Marital status

1 single
2 sarried
9 unclear on MNS form

105 **RACE**
Race of mother

1 Caucasian
2 Aboriginal/part Aboriginal
3 other
9 unclear on MNS form

106 **SEX**
Sex of baby

1 male
2 female
9 unclear on MNS form

ADDITIONAL COMMENTS BY MOTHER

107 Mother smoked outside postnatal

0 N/A, non smoker
1 YES, smokes outside
2 no comment regarding issue

108 Others stopped smoking in pregnancy

0 N/A, non smoker
1 YES, smokes outside
2 no comment regarding issue

109 Others smoked outside in pregnancy

0 N/A, non smoker
1 YES, smokes outside
2 no comment regarding issue

110 Others smoked outside postnatal

0 N/A, non smoker
1 YES, smokes outside
2 no comment regarding issue

RESPONSE TYPE - CODING GUIDELINES, PRIMIPAROUS WOMEN

111

Initial Response:
0 response to section 3 or to sect 1, 2, 4 of main questionnaire in mail follow-up
1 response to original mail questionnaire and also revised page in section 3 on BF
2 response to REVISED QUESTIONNAIRE mail follow-up (RQ-M-fup) request
3 response to telephone follow-up (T-fup) request
4 arrived after T-fup - mother had stated questionnaire in post
5 late arriving questionnaire response to M-fup, not T-fup
6 non response following T-fup
7 return to sender (RTS) (mail returned unopened)
8 non response (N-R), no phone for follow-up
9 withdrawn, poor English fluency

112

Telephone Follow-up
0 N/A
1 positive response from mother
2 unsure/guarded response from mother
3 requested new questionnaire
4 stated questionnaire in mail/already sent
5 phone answers to WHOLE of questionnaire
6 phone answers to PARTIAL questionnaire (i.e., section 1,2,4 OR 3)
7 withdrew from study
8 no longer live there, moved, address unknown, not contactable
9 poor English fluency

113

Non-responders
0
1 partial participation (i.e., only section 1,2,4 OR section 3 returned)
2 RTS (return to sender) no phone for follow-up
3 RTS - phone disconnected/changed/moved/not there
4 N-R (non-response) no phone for follow-up
5 N-R - phone disconnected/changed/moved/not there/ no answer
6 N-R - left state/country
7 N-R - 'out bush and unavailable', 'never came to phone'
'left message on answering machine'

114

Other information related to non-responders
0
1 withdrew on phone
2 difficulty speaking English on phone
3 partial participation, (sections 1,2,4 OR section 3) due to poor English fluency
4 partial participation, no phone for follow-up or remaining uncompleted section
5 partial participation, phone answered, however, not there or moved
6 withdrew - letter
7
8 partial participation, no phone follow-up done (too late to contact mother)

FORMULA "A"

AGE OF INFANT OR INDEX INFANT WHEN QUESTIONNAIRE COMPLETED
Gc to closest week - use calendar to estimate (page 21)

Example: divide week such that:
5 weeks plus up to 3 days = 5 weeks
5 weeks plus 4 or more days = 6 weeks

FORMULA "B"

DETERMINING AGE IN WEEKS OF INFANT, INDEX INFANT AND PREVIOUS CHILD

For example: sleeping position changed, solids introduced, breast feeding stopped

When indicating age in weeks age to be stated as the **'th** week, such that:
4 weeks = **5th** week
10 weeks = **11th** week

FORMULA "C"

BREAST FEEDING AND INTRODUCTION OF ARTIFICIAL FEEDING

When age given in days:
Days 1-7 = **1st** week then follow 'Formula B' above.

FORMULA "D"

CONVERSION OF MONTHS TO WEEKS - INFANT, INDEX INFANT AND PREVIOUS CHILD

For example: solids, sleeping position changed, breast feeding

Month/s:		Weeks:
1	=	4
2	=	9
3	=	13
4	=	17
5	=	22
6	=	26
7	=	30
8	=	35
9	=	39
10	=	43
11	=	48
12	=	52
13	=	56
14	=	61
15	=	65
16	=	69
17	=	74
18	=	78
19	=	82
20	=	87
21 & over	=	91

Formula E

FOR APPROXIMATE ANSWERS TO DETERMINE AGE OF INFANT, INDEX INFANT OR PREVIOUS CHILD

For example: age at which solids were introduced

When

1) 6 - 8 weeks is stated, take the middle point, thus = 7 weeks.
   Then use Formula "B" to estimate **'nth** week, thus = 8th week.

2) 6 - 7 weeks is stated, use dice to obtain figure, either 6 or 7 weeks.
   Then use Formula "B" to estimate the 6th or 7th **'nth** week,
   thus = 7th week or 8th week respectively.

Formula F

FOR PRIMIPAROUS QUESTIONNAIRE:

SECTION THREE ON BREAST FEEDING

Guidelines related to incorrect page two in section three on breast feeding.

* **Original questionnaire (sections one, two, three, and four)**
  Original questionnaire posted to mothers contained a printing error on page two of section three on breast feeding. Pages one and three of section three were correct.

* **Corrected questionnaire (section three - pages one, two and three)**
  Mothers were asked to re-answer section three completely: thus repeating pages one and three of section three, and completing page two for the first time.

1) Treat answers on pages one and three of section three in the original questionnaire as the primary data to be used in analysis.

2) Missing data to be obtained from page two in the section three of the corrected questionnaire. These data to be used in conjunction with data obtained on pages one and three in section three of the original questionnaire.
   (Ignore repeated answers on the first and third pages of section three in the corrected questionnaire).

Calendar 1993

June	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
July				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
August							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31					
September			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30			
October					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	24	26	27	28	29	30	31
November							
	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21

APPENDIX B

The Western
Australian
Research
Institute for
Child Health Ltd

A request to mothers who have recently given birth to a baby to participate in a research project.

Dear new mother,

We would like to invite you to take part in a study that is looking at some everyday activities of parents in caring for their newborn babies. We are asking about how parents position their newly born children to sleep, how they feed them, dummy and finger sucking, and information about smoking. We are interested in finding out if parents have changed any of these activities for this newborn baby compared to their previous child. One of our further aims is to discover the sources which parents believe provide helpful information about caring for their children.

The study is co-ordinated through the Western Australian Institute for Child Health (WARICH) and Edith Cowan University (ECU).

A random selection of mothers has been chosen from birth information held by the Health Department of Western Australia. In releasing this information, the Commissioner of Health has agreed that this research will provide a valuable benefit to the community. The researchers will adhere to strict confidentiality guidelines and will protect the privacy of all people participating in the study.

Participation is voluntary. However, it is important that we receive as many responses as possible and we value your participation in the study. We believe the information provided by the project will contribute to a better understanding of maternal and child health.

The questionnaire will take about 15 minutes of your time to complete. We welcome any questions you may have about this study, so please feel free to contact Ann Callaghan during office hours on (09) 340 8680.

Thank you for your help.

Yours faithfully,

Ann M. Callaghan
Registered Midwife
(Honours candidate, ECU)

Professor Fiona Stanley
Director, WARICH
Professor of Paediatrics,
University of Western
Australia.

Dr. Anne Read
Research Officer

Registered Office:
Princess Margaret Hospital
for Children
Roberts Road,
Subiaco, W.A. 6008
Telephone: (09) 382 8222
Facsimile: (09) 388 1171
Telex: AA93402

Postal Address:
GPO D184, Perth WA 6001
Registered Office:
Princess Margaret Hospital for Children
Roberts Rd, Subiaco WA 6008
Telephone: (09) 3408533
Facsimile: (09) 3683414

Please do not write in this column

1-4

QUESTIONNAIRE INSTRUCTIONS

This questionnaire is divided into four sections. There are a number of similar questions, but we ask that you complete all questions.

In most cases please answer by using a tick ☑ in the box.

Tick only ONE box unless otherwise asked.

When a question asks about ***YOUR BABY***, it means the most recently born or youngest of your children.

The term **PREVIOUS CHILD** refers to the child closest in age to ***THIS BABY***.

There is no need for your name. We would like, however, your date of birth and the dates of birth of ***YOUR BABY*** and your **PREVIOUS CHILD.**

Date of birth of Mother 5-10

Date of birth of ***YOUR BABY*** 11-16

Age of ***YOUR BABY*** now ..... weeks.

Date of birth of your **PREVIOUS CHILD** 17-22

Date questionnaire completed 23-24

Please do not write in this column

SECTION ONE - BABIES SLEEPING POSITION:

25-28

The sleeping position of your most recently born baby (YOUR BABY):

Q1. In what position did ***YOUR BABY*** usually sleep during the last month? 29

- On his/her back ☐
- On his/her side ☐
- On his/her tummy ☐

Q2. Has this position been the same since ***YOUR BABY'S*** birth?

Yes ☐→ Go to Q5.

No ☐↓

Q3. What position did ***YOUR BABY*** previously sleep in? 30

- On his/her back ☐
- On his/her side ☐
- On his/her tummy ☐

Q4. What was ***YOUR BABY'S*** age when his/her sleeping position last changed? 31-32

.....days, ...weeks or .....months

Q5. Does ***YOUR BABY*** change position when sleeping or when placed in a cot or bassinet to sleep?

No ☐→ Go to Q7.

Yes ☐↓

Q6. If ***YOUR BABY*** does change positions during sleep, what position does he/she most often change to? 33

- On his/her back ☐
- On his/her side ☐
- On his/her tummy ☐

Q7. Has ***YOUR BABY*** had a medical condition that required you to position him/her for sleep in a particular way? 34

No ☐

Yes ☐ Please describe:.....

.....

Please do not write in this column

35-38

Q8. Please indicate the three most important factors or sources of information which influenced you in your choice of the present sleeping position for ***YOUR BABY.***

To do this, place a number (1, 2 or 3) in **three of the boxes** below so that:
1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank 39-40

* Advice or example from family or friends ☐ 41-42
* Books, Pamphlets, Talks, or Parenthood Classes ☐ 43-44
* Child Health Nurse ☐
* Doctor, Obstetrician, Paeditrician, or your GP ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Midwife or Nurse at the hospital in which ***THIS BABY*** was born ☐
* Organisations (such as parent support or education groups) ☐
* Your own experience/feelings ☐
* Other, please describe: ☐

.....

The sleeping position of your PREVIOUS CHILD

Q9. In what position did you most often put your **PREVIOUS CHILD** down to sleep during the first six months of his/her life? 45

On his/her back..... ☐
On his/her side ☐
On his/her tummy ☐

Please do not write in this column

46-49

50

Q10. Did your **PREVIOUS CHILD** have a medical condition that required you to position him/her for sleep in a particular way during the first six months of his/her life?

No ☐

Yes ☐ Please describe:.....

.....

Q11. Please indicate the three most important factors or sources of information which influenced your choice of sleeping position for your **PREVIOUS CHILD** during the first six months of his/her life.

To do this, place a number (1, 2 or 3) in **three of the boxes** below so that:

1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank.

51-52

* Advice or example from family or friends ☐ 53-54
* Books, Pamphlets, Talks, or Parenthood Classes ☐ 55-56
* Child Health Nurse ☐
* Doctor, Obstetrician, Paeditrician, or your GP ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Midwife or Nurse at the hospital in which your **PREVIOUS CHILD** was born ☐
* Organisations (such as parent support or education groups) ☐
* Your own experience/feelings ☐
* Other, please describe: ☐

.....

Please do not write in this column

SECTION TWO - ABOUT DUMMY USE AND INFANT FINGER SUCKING:

57-60

Dummy use and Infant finger sucking for THIS BABY

Q1. During the last two weeks has ***YOUR BABY*** used a dummy when asleep or when placed down to sleep? 61

No ☐→ Go to Q3.

Yes ☐

↓

Q2. How often has ***YOUR BABY*** used a dummy when asleep or when placed down to sleep during the past two weeks?

For every sleep ☐

For most sleeps ☐

On occasions ☐

Q3. During the last two weeks, has ***YOUR BABY*** sucked on his/ner fingers or thumb when asleep or when placed down to sleep? 62

No ☐→ Go to Q5.

Yes ☐

↓

Q4. How often has ***YOUR BABY*** sucked his/her fingers or thumb when asleep or when placed down to sleep during the past two weeks?

For every sleep ☐

For most sleeps ☐

On occasions ☐

Q5. Please indicate the three <u>most</u> important factors or sources of information which influenced dummy use or finger sucking for ***YOUR BABY.***

To do this, place a number (1, 2 or 3) in <u>**three of the boxes**</u> below so that:

1 = most important

2 = next or second most important

3 = third in importance

This will mean that most of the boxes will be left blank 63-64

* Advice or example from family or friends ☐ 65-66

* Books, Pamphlets, Talks, or Parenthood Classes ☐ 67-68

* Child Health Nurse ☐

* Doctor, Obstetrician, Paeditrician, or your GP ☐

* Media: Television, Radio, Newspapers or Magazines ☐

* Midwife or Nurse at the hospital in which ***THIS BABY*** was born ☐

* Organisations (such as parent support or education groups) ☐

* Your own experience/feelings ☐

* Other, please describe: ☐

.....

In this column

Dummy use and infant finger sucking for your PREVIOUS CHILD

☐☐☐☐ 69-72

Q6. Did your **PREVIOUS CHILD** use a dummy when asleep or when placed down to sleep during the first six months of his/her life? ☐ 73

No ☐→ Go to Q8.

Yes ☐

↓

Q7. How often did your **PREVIOUS CHILD** use a dummy when asleep or when placed down to sleep during the first six months of his/her life?

For every sleep ☐

For most sleeps ☐

On occasions ☐

Q8. Did your **PREVIOUS CHILD** suck on his/her fingers or thumb when asleep or when placed down to sleep during the first six months of his/her life? ☐ 74

No ☐→ Go to Q10.

Yes ☐

↓

Q9. How often did your **PREVIOUS CHILD** suck his/her fingers or thumb when asleep or when placed down to sleep during the first six months of his/her life?

For every sleep ☐

For most sleeps ☐

On occasions ☐

Q10. Please indicate the three most important factors or sources of information which influenced dummy use of finger sucking for your **PREVIOUS CHILD** during the first six months of his/her life.

To do this, place a number (1, 2 or 3) in <u>three of the boxes</u> below so that:

1 = most important

2 = next or second most important

3 = third in importance

This will mean that most of the boxes will be left blank. ☐☐ 75-76

* Advice or example from family or friends ☐ ☐☐ 77-78

* Books, Pamphlets, Talks, or Parenthood Classes ☐ ☐☐ 79-80

* Child Health Nurse ☐

* Doctor, Obstetrician, Paeditrician, or your GP ☐

* Media: Television, Radio, Newspapers or Magazines ☐

* Midwife or Nurse at the hospital in which your **PREVIOUS CHILD** was born ☐

* Organisations (such as parent support or education groups) ☐

* Your own experience/feelings ☐

* Other, please describe:

..... ☐

Please do not write in this column

SECTION THREE - FEEDING YOUR CHILDREN WHEN THEY WERE BABIES 81-84

Feeding YOUR BABY

Q1. Have you breast fed ***YOUR BABY*** at any time? 85

No ☐→ Go to Q6.

Yes ☐

↓

Q2. Are you still breast feeding ***YOUR BABY***? (Tick only ONE box) 86

Yes, all feeds ☐

Yes, most feeds ☐ →Go to Q5.

Yes, on occasions ☐

No ☐

↓

Q3. How old was ***YOUR BABY*** when you stopped breast feeding? 87-88

.....days, ...weeks, or .....months

Q4. Can you say why you stopped breast feeding? 89

.....

.....Go to Q7.

Q5. Has ***YOUR BABY*** been given any milk other than breast milk? 90

No ☐→ Go to Q10.

Yes ☐

↓

Q6. Can you say why you introduced other milks to ***YOUR BABY***? 91

.....

.....

Q7. How old (in days, weeks, or months) was ***YOUR BABY*** when milk <u>other</u> than breast milk was given for the first time? 92-93

.....days, ...weeks, or .....months

Q8. What milk(s) <u>have</u> you fed ***YOUR BABY*** (Please tick any appropriate answers) 94

Breast milk ☐

Formula ☐ Which brands?.....

Cow's milk ☐

Soy milk ☐

Goat's milk ☐

Other ☐ Please describe:.....

Q9. What milk(s) does ***YOUR BABY*** drink <u>now</u>? (Please tick appropriate answers) 95

Breast milk ☐

Formula ☐ Which brands?.....

Cow's milk ☐

Soy milk ☐

Goat's milk ☐

Other ☐ Please describe:.....

Please do not write In this column

Q10. Have you given ***YOUR BABY*** solids (any food other than milk)? 96-99

No ☐→ Go to Q12.

Yes ☐

↓

Q11. How old (in weeks) was ***YOUR BABY*** when solids were first introduced? 100-1

.....weeks

Q12. Has ***YOUR BABY*** had a medical condition that required you to feed him/her in a particular way? 102

No ☐

Yes ☐ Please describe:.....

.....

Q13. Have you, (mother), had a medical condition or received treatment that affected how ***YOUR BABY*** was fed? Please describe: 103

No ☐

Yes ☐ Please describe:.....

.....

Q14. Please indicate the three <u>most</u> important factors or sources of information which influenced you in your choice of the type of feeding for ***YOUR BABY.*** To do this, place a number (1, 2 or 3) in **<u>three of the boxes</u>** below so that:

1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank 104-5

* Advice or example from family or friends ☐ 106-7
* Books, Pamphlets, Talks, or Parenthood Classes ☐ 108-9
* Child Health Nurse ☐
* Doctor, Obstetrician, Paediatrician, or your GP ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Midwife or Nurse at the hospital in which ***THIS BABY*** was born ☐
* Organisations (such as parent support or education groups) ☐
* Your own experience/feelings ☐
* Other, please describe:

  ..... ☐

Please do not write in this column

Feeding your **PREVIOUS CHILD**

110-13

Q15. Did you breast feed your **PREVIOUS CHILD**? 114

No ☐→ Go to Q18.

Yes ☐

↓

Q16. How old was your **PREVIOUS CHILD** when you stopped breast feeding? 115-16

.....days, ...weeks, or .....months

Q17. How old was your **PREVIOUS CHILD** when milk <u>other</u> than breast milk was given for the first time? 117-18

.....days, ...weeks, or .....months

Q18. What milk(s) did you feed your **PREVIOUS CHILD** in the first six months of his/her life? (Please tick any appropriate answers) 119

Breast milk ☐

Formula ☐ Which brands?.....

Cow's milk ☐

Soy milk ☐

Goat's milk ☐

Other ☐ Please describe:.....

Q19. Did your **PREVIOUS CHILD** have a medical condition that required you to feed him/her in a particular way during the fist six (6) months of his/her life? 120

No ☐

Yes ☐ Please describe:.....

Q20. Did you, (mother), have a medical condition or receive treatment that affected how your **PREVIOUS CHILD** was fed during the first six months of his/her life? 121

No ☐

Yes ☐ Please describe:.....

Q21. How old was your **PREVIOUS CHILD** when solids were introduced for the first time? 122-23

.....

Please do not write in this column

Q22. Please indicate the three most important factors or sources of information which influenced you in your choice of the type of feeding for your **PREVIOUS CHILD** during the first six months of his/her life. 124-27

To do this, place a number (1, 2 or 3) in **three of the boxes** below so that:
1 = most important
2 = next or second most important
3 = third in importance

This will mean that most of the boxes will be left blank 128-29

* Advice or example from family or friends 130-31
* Books, Pamphlets, Talks, or Parenthood Classes 132-33
* Child Health Nurse
* Doctor, Obstetrician, Paediatrician, or your GP
* Media: Television, Radio, Newspapers or Magazines
* Midwife or Nurse at the hospital in which your **PREVIOUS CHILD** was born
* Organisations (such as parent support or education groups)
* Your own experience/feelings
* Other, please describe:

.....

Please do not write in this column

SECTION FOUR - ABOUT SMOKING

☐☐☐☐ 134-137

Smoking cigarettes and YOUR BABY:

Q1. Did you smoke during the time you were pregnant with ***THIS BABY***?

No ☐→ Go to Q5.

Yes ☐↓

Q2. How many cigarettes did you smoke per day during your pregnancy? ☐ 138

..... per day.

Q3. Did you give up smoking cigarettes during the pregnancy of ***THIS BABY***?

No ☐→ Go to Q5.

Yes ☐↓

Q4. How many weeks pregnant were you when you gave up smoking ? ☐ 139

..... weeks pregnant.

Q5. Have you smoked since ***YOUR BABY*** was born?

No ☐→ Go to Q7.

Yes ☐↓

Q6. How many cigarettes do you smoke a day now? ☐ 140

..... per day.

Q7. Did anyone else living with you smoke cigarettes during your recent pregnancy?

No ☐→ Go to Q9.

Yes ☐↓

Q8. How much did they smoke? (If more than one other person at home smoked, please write the total number of cigarettes smoked) ☐ 141

..... per day.

Q9. Has anyone else living with you smoked cigarettes since ***YOUR BABY*** was born?

No ☐→ Go to Q11.

Yes ☐↓

Q10. How many do they smoke now? (If more than one other person at home smokes, please write the total number of cigarettes smoked) ☐ 142

..... per day.

Please turn over to the last page for remaining questions:

Please do not write in this column

Q11. Please indicate the three most important factors or sources of information which have influenced your smoking patterns since you were first pregnant with ***THIS BABY***.
To do this, place a number (1, 2 or 3) in **three of the boxes** below so that:
1 = most important
2 = next or second most important
3 = third in importance

☐☐☐☐ 143-46

This will mean that most of the boxes will be left blank ☐☐ 147-48

* Advice or example from family or friends ☐ ☐☐ 149-50
* Books, Pamphlets, Talks, or Parenthood Classes ☐ ☐☐ 151-52
* Child Health Nurse ☐
* Doctor, Obstetrician, Paediatrician, or your GP ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Midwife or Nurse at the hospital in which ***THIS BABY*** was born ☐
* Organisations (such as parent support or education groups) ☐
* Your own experience/feelings ☐
* Other, please describe:

..... ☐

Smoking and your **PREVIOUS CHILD**

Q12. Did you smoke cigarettes during the pregnancy of your **PREVIOUS CHILD**? ☐ 153

No ☐→ Go to Q.14
Yes ☐
↓

Q13. How many cigarettes did you smoke per day during the pregnancy of your **PREVIOUS CHILD**?

.....per day

Q14. Did you smoke cigarettes during the first six months after your **PREVIOUS CHILD** was born? ☐ 154

No ☐
Yes ☐
↓

Q15. How many cigarettes did you smoke per day during the first six months after your **PREVIOUS CHILD** was born?

.....per day.

****

Thank you for your help and interest in this study.
Please return this questionnaire in the reply-paid envelope as soon as possible.

CODING GUIDELINES - MULTIPAROUS WOMEN

Page 1 DEMOGRAPHIC INFORMATION

COLUMN

1-4 ID NUMBER (IDNO)	1000 primips **2000 multips** 3000 midwives 4000 C.H.N. 5000 hospitals
5-10 Date of birth of **Mother**	dd mm yy – – – – (blank) missing information, unclear, no answer, lost to follow-up (ltfu),
11-16 Date of birth of **Baby**	dd mm yy – – – – missing
17-22 Date of birth of **Previous Child** (PC = previous child	dd mm yy – – – – missing
23-24 Baby age - matched with date questionnaire completed	– – missing/ unable to ascertain 00 AGE IN WEEKS (see Formula "A", Appendix A p.21)

Page 2 SECTION 1 - SLEEPING POSITION

25-28 IDNO	
29 **Q1** Baby usual **SP** (SP = sleeping position)	- ltfu 0 1 back 2 side 3 tummy 4 back & side 5 side or back & tummy 7 no answer 8 don't know 9 unclear

Page 2 continued

30 **Q 2 & 3**
Baby previous SP

- ltfu
0
1 YES
2 back
3 side
4 tummy
5 back & side
6 YES changed position unclear
7 no answer
8 back or side & tummy
9 unclear

31-32 **Q4**
Babies age when SP last changed

– ltfu
00 N/A (YES to Q2)
NUMBER IN WEEKS (Formula "B", Appendix A p.21)
77 no answer
88 don't know
99 unclear

---

33 **Q 5 & 6**
Does **B**aby roll over or change SP

- ltfu
0
1 NO
2 back
3 side
4 tummy
5 back & side
6 back or side & tummy
7 no answer
8 YES, but position unclear
9 unclear

---

34 **Q7**
B Medical condition related to SP

- ltfu
0 raised cot with reflux
1 NO
2 colic
3 reflux/vomiting mild/moderate/severe
4 hips
5 shoulder problems, Erbs palsy
6 chest infection/cold/snuffles/apnoea/monitor
7 no answer
8 other unspecified problems / surgery
9 unclear, can't remember

Page 3

35-38
IDNO

39-40 **Q8/1**
41-42 **Q8/2**
43-44 **Q8/3**
1st, 2nd & 3rd important influencing factor (inf/fac) related to Babies SP

(same answering structure for each of the influencing factors in each of the sections)

- -- lttu
- 00
- 01-09 corresponding number
- USE dice for multiple/ticked answers
- 55 no influences
- 77 no answer
- 88 don't know
- 99 unclear

OTHER answers provided by mother

- 10 religion
- 11 professional experience
- 12 specific SIDS information
- 13 (not u. ed)
- 14 nurses at a transferred hospital
- 15 babies preference/comfort
- 16 specific medical treatment
- 17 specific problems with previous child
- 18 aware of SIDS, but baby comfort/needs/colic a priority
- 19 concern regarding vomiting and reflux
- 20 advice of a long time ago

---

45 **Q9**
PC usual SP

(PC = previous child)

- - lttu
- 0
- 1 back
- 2 side
- 3 tummy
- 4 back & side
- 5 side or back & tummy
- 7 no answer
- 8 don't know
- 9 unclear

Page 4

46-49
IDNO

---

50 **Q10**
PC Medical condition related to SP

- - lttu
- 0 raised cot with reflux
- 1 NO
- 2 colic
- 3 reflux/vomiting mild/moderate/severe
- 4 hips
- 5 shoulder problems, Erbs palsy
- 6 chest infection/cold/snuffles/apnoea/monitor
- 7 no answer
- 8 other unspecified problems / surgery
- 9 unclear, can't remember

Page 4 continued

51-52 **Q11/1**
53-54 **Q11/2**
55-56 **Q11/3**
1st, 2nd, 3rd inf/fac related to SP of **PC**

-- ltfu
00
1-9 corresponding number
USE dice for multiple & ticked answers
55 no influences
77 no answer
88 don't know
99 unclear

OTHER answers provided by mother

10 religion
11 professional experience
12 specific SIDS information
13 (not used)
14 nurses at a transferred hospital
15 babies preference/comfort
16 specific medical treatment
17 specific problems with previous child
18 aware of SIDS, but baby comfort/needs/colic a priority
19 concern regarding vomiting and reflux
20 advice of a long time ago

Page 5 **SECTION 2 - DUMMY USE/FINGER SUCKING (DUFS)**

57-60
IDNO

---

61 **Q 1 & 2**
Baby, dummy use

(DU = dummy ease)

- ltfu
0
1 NO
2 every sleep
3 most sleeps
4 on occasions
5 co-sleeping or breast feeding
6 YES, but unclear how often
7 no answer
8 don't know
9 unclear

---

62 **Q 3 & 4**
Baby, finger sucking

(FS = finger sucking)

- ltfu
0
1 NO
2 every sleep
3 most sleeps
4 on occasions
5 co-sleeping or breast feeding
6 YES, but unclear how often
7 no answer
8 don't know
9 unclear

Page 5 continued

63-64 **Q5/1**
65-66 **Q5/2**
67-68 **Q5/3**
1st, 2nd, 3rd inf/fac related to **Baby** DUFS

-- ltfu
00
1-9 corresponding number
USE dice for multiple or unclear answers
55 no influences/ N/A /line through section
77 no answer
88 don't know
99 unclear

OTHER answers provided by mother

14 information regarding SIDS
15 babe preference/settles
16 Question not answered but NO to Q 1 & 3
17 Other mothers in hospital where baby born
18 Nurses at transferred hospital
19 Own schooling/education/observation of other children
20 didn't know it was important, no information regarding issue
21 medical condition (i.e., cleft palate)
22 previous bad experience with dummies
23 previous good experience with dummies

PAGE 6
69-72
IDNO

---

73 **Q 6 & 7**
PC dummy use

- ltfu
0
1 NO
2 every sleep
3 most sleeps
4 on occasions
5 co-sleeping or breast feeding
6 YES, but unclear how often
7 no answer
8 don't know
9 unclear

---

74 **Q 8 & 9**
PC finger sucking

- ltfu
0
1 NO
2 every sleep
3 most sleeps
4 on occasions
5 co-sleeping or breast feeding
6 YES, but unclear how often
7 no answer
8 don't know
9 unclear

Page 6 continued

75-76 **10/1**
77-78 **10/2**
79-80 **10/3**
1st, 2nd, 3rd inf/fac related to **PC** DUFS

- ltfu
00
1-9 corresponding number
USE dice for multiple/ticked answers
55 no influences/ N/A /line through section
77 no answer
88 don't know
99 unclear

OTHER factors provided by mother

14 information regarding SIDS
15 babe preference/settles
16 Question not answered but NO to Q 1 & 3
17 other mothers in hospital where baby born
18 nurses at transferred hospital
19 own schooling/education/observation of other children
20 didn't know it was important, no information re. issue
21 medical condition (i.e., cleft palate)
22 previous bad experience with dummies
23 previous good experience with dummies

Page 7 **SECTION 3 - BREAST FEEDING**
81-84
IDNO

---

85 **Q1**
Have you breast fed **B**aby

(BF = breast feeding)

- ltfu
0
1 NO
2 YES
7 no answer
8 don't know
9 unclear

---

86 **Q2**
Still breast feeding **B**aby

- ltfu
0 N/A (NO to Q1)
1 YES all feeds
2 most feeds
3 on occasions
4 NO
7 no answer
8 don't know
9 unclear

87-88 **Q3**
Babies age when stopped BF

-- ltfu
00 N/A (NO to Q1) or (YES to Q2)
AGE IN WEEKS (Formula "C" and/or "D", Appendix A p.21)
77 no answer
88 don't remember
99 unclear

Page 7 continued

89 **Q4**

Why stopped BF Baby

- ltfu
0 N/A (NO to Q1 & Q5)
1 low/stopped milk supply, no milk at birth,not settle (hungry),poor weight gain,concern for baby,needed top-up,baby preference
2 maternal health/disability/illness/medication
3 maternal feeding difficulties-cracked/inverted nipples,mastitis abscess, over supply,painful,uncomfortable. Previous lack of success BF,stress/worn out,post LUSCS/operation -delay in milk
4 maternal social - convenience/work/babysitting, contraception, preference/dislike, see if baby would like it, not suitable to both
5 babe neonatal/health factors, fussy difficult feeder, refused breast, tongue tie/mouth problems, lactose intolerance
6 maternal & baby multiple factors
7 no answer
8 don't know
9 unclear

---

90 **Q5**

Has other milk been given to Baby

- ltfu
0
1 NO or "1" to Q2 - all feeds
2 YES - or stopped BF
3 YES, on few occasions/periods only (e.g.,sickness,to try)
7 no answer
8 don't know
9 unclear

---

91 **Q6**

Why other milk was given to Baby

- ltfu
0 N/A NO to Q1 & Q5
1 low/stopped milk supply,no milk at birth,not settle (hungry), poor weight gain, concern for baby, needed top-up, baby preference
2 maternal health/disability/illness/medication
3 maternal feeding difficulties- cracked/inverted nipples,mastitis abscess,oversupply,painful,uncomfortable. previous lack of success at BF,stress and worn out,post LUSCS/operation & delay in milk
4 maternal social- convenience/work/babysitting, contraception, preference/dislike, see if baby would like it, not suitable to both
5 babe neonatal/health factors, fussy difficult feeder, refused breast,tongue tie/mouth problems, lactose intolerance.
6 maternal & baby multiple factors
7 no answer
8 don't know
9 unclear

92-93 **Q7**

Age other milk first given to Baby

-- ltfu
00 N/A (NO to Q5)
AGE IN WEEKS (Formula "C" and/or "D", Appendix A p.21)
77 no answer
88 don't know
99 unclear

Page 7 continued

94 **Q 8**

What milks have you given to **B**aby

- ltfu
0
1 BF always (NO to Q5)
2 BF/AF (AF= artificially fed)
3 AF
7 no answer
8 don't know
9 unclear

---

95 **Q9**

What milks do you give **B**aby NOW

-
0 unanswered
1 BF always (NO to Q5)
2 BF/AF
3 AF
7 no answer
8 don't know
9 unclear

Page 8

96-99

IDNO

100-1 **Q 10 & 11**

Age solids given to **B**aby

-- ltfu
00 NO, Never
AGE IN WEEKS (Formula "C" and/or "D", Appendix A p.21)
77 no answer
88 don't know
99 unclear

---

102 **Q 12**

Baby medical condition affecting feeding type (for baby)

- ltfu
0
1 NO
2 neonatal problems/preterm, newborn illness, weight factors/small baby
3 vomiting, reflux
4 colic
5 infections/sickness
6 eczema/ family hist eczema/allergies
7 no answer
8 other feeding problems, lactose intolerance
9 unclear, don't remember

---

103 **Q 13**

Mother medical condition affecting feeding type (for baby)

- ltfu
0
1 NO
2 mastitis, breast abscess
3 irregular periods, contraception, subsequent pregnancy
4 YES, problems unclear
5 general infections/problems,
6 rheumatoid arthritis, scoliosis
7 no answer
8 birth/postnatal problems / depression
9 unclear

Page 8 continued

104-105 **Q14/1** 106-107 **Q14/2** 108-109 **Q14/3**	-- ltfu 00
1st, 2nd, 3rd, inf/fac related to breast feeding	1-9 corresponding number USE dice for multiple/ticked answers 55 no influences 77 no answer 88 don't know 99 unclear
OTHER factors provided by mother	10 religion 11 professional experience 12 (not used) 13 research, personal/education 14 economics 15 babies preference/choice/need 16 to prevent allergies 17 no other choice, milk stopped/didn't come in, just happened that way 18 nurse at referred hospital 19 own education 20 teething, biting breast 21 hygiene 22 feeding difficulties, unable to feed

Page 9

110-13
IDNO

114 **Q 15**
Did you breast fed **PC**

- ltfu
0
1 NO
2 YES
7 no answer
8 don't know
9 unclear

115-16 **Q 16**
PC age when stopped BF

-- ltfu
00 N/A (NO to Q15)
AGE IN WEEKS (formula "C" and/or "D", Appendix A p.21)
97 no answer
98 don't remember
99 unclear

117-18 **Q 17**
Age other milk first given to **PC**

-- ltfu
00
AGE IN WEEKS (formula "C" and/or "D", Appendix A p.21)
97 no answer
98 don't know
99 unclear

Page 9 continued

119 **Q 18**
What milks have you given to **PC**

- ltfu
0
1 BF always
2 BF/AF
3 AF
7 no answer
8 don't know
9 unclear

---

120 **Q19**
PC medical condition affecting feeding type (related to PC)

- ltfu
0
1 NO
2 neonatal problems/preterm, newborn illness, weight factors/small baby
3 vomiting, reflux
4 colic
5 infections/sickness
6 eczema/ family history eczema/allergies
7 no answer
8 other feeding problems, lactose intolerance
9 Unclear, don't remember

---

121 **Q 20**
Mother medical condition affecting feeding type (of PC)

- ltfu
0
1 NO
2 mastitis, breast abscess
3 irregular periods, contraception, subsequent pregnancy
4 YES, problems unclear
5 general infections/problems/psychiatric
6 rheumatoid arthritis, scoliosis
7 no answer
8 birth/postnatal problems/depression
9 unclear

122-23 **Q 21 & 22**
Age solids given to **PC**

-- ltfu
00 NO, Never
AGE IN WEEKS (Formula "C" and/or "D", Appendix A p.21)
77 no answer
88 don't know
99 unclear

Page 10
124-27
IDNO

128-129 **Q22/1**
130-131 **Q22/2**
132-133 **Q22/3**
1st, 2nd, 3rd important inf/fact related to BF of **PC**

– ltfu
00
01-09 corresponding number
USE dice for multiple/ticked answers
55 no influences
77 no answer
88 don't know
99 unclear

OTHER answers provided by mother

10 religion
11 professional experience
12 (not used)
13 research, personal education
14 economics
15 babies preference/need/choice
16 to prevent allergies
17 no other choice, milk stopped/didn't come in, just happened that way
18 nurse at referred hospital
19 own education
20 teething, biting breast
21 hygiene
22 feeding difficulties, unable to feed

Page 11 **SECTION FOUR - CIGARETTE SMOKING**

134-137
IDNO

---

138 **Q 1 & 2**
Baby, maternal cigarettes per day during pregnancy (MS= maternal smoking)

- ltfu
1 NO (none)
2 1-9 per day
3 10-19 per day
4 20 or more per day
6 YES, number unclear, can't remember/not stated
7 no answer
8 don't know
9 unclear

---

139 **Q 3 & 4**
Mother: did you give up smoking during the pregnancy of this Baby

- ltfu
0 N/A (non smoker)
1 smoker who did not give up during pregnancy
2 before 20 weeks
3 after 20 weeks
4 YES, but gestation not stated
7 no answer
8 don't know
9 unclear

Page 11 continued

140 **Q 5 & 6**

Mother: postnatal smoking (this baby) cigarettes per day

- lttu
1 NO (none)
2 1-9 daily
3 10-19 daily
4 20 or more daily
6 YES, number unclear, can't remember/not stated
7 no answer
8 don't know
9 unclear

---

141 **Q 7 & 8**

Baby- Smoking during pregnancy: other people

- lttu
1 NO
2 1-9 daily
3 10-19 daily
4 over 20 daily
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

---

142 **Q 9 & 10**

Baby- smoking postnatal: other persons

- lttu
1 NO
2 1-9 daily
3 10-19 daily
4 20 or more daily
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

Page 12

143-146
IDNO

147-148 **Q11/1**
149-150 **Q11/2**
151-152 **Q11/3**
1st, 2nd, 3rd inf/fac related to MS

- ltfu
0
01-09 corresponding number
USE dice for multiple/ticked answers
55 no influences
77 no answer
88 don't know
99 unclear

Other answers provided by mother

10 religion
11 research, personal/education
12 gave up some time ago
13 never smoked
14 economics
15 no answer but NO smoking on Page 11
16 health related problems of others (e.g., husband)
17 gave up prior to pregnancy
18 gave up during pregnancy
19 abhors smoking near baby, would not harm baby
20 birth hospital policy of no smoking and subsequently has not recommenced smoking
21 stopped immediately knew was pregnant
22 nicotine/cigarette addiction-cravings, unable to quit
23 patterns havn't changed, havn't given up

---

153 **Q 12 & 13**
PC, MS in pregnancy per day

- ltfu
0 NO (none)
2 1-9 per day
3 10-19 per day
4 20 or more per day
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

---

154 **Q 14 & 15**
PC, MS postnatal smoking in the first six months

- ltfu
0
2 1-9 per day
3 10-19 per day
4 20 or more per day
6 YES, number unclear, can't remember, not stated
7 no answer
8 don't know
9 unclear

ADDITIONAL DEMOGRAPHIC INFORMATION

155	**RESIDENCE** locale where mother lives (By post code)	1 City 2 Rural/Country 3 Out of state (inter state or overseas) 9 Unclear on MNS (midwives) form
156	**MARITAL** Marital status	1 Single 2 Married 9 Unclear on MNS form
157	**RACE** Race of mother	1 Caucasian 2 Aboriginal/part Aboriginal 3 Other 9 Unclear on MNS form
158	**SEX** Sex of baby	1 Male 2 Female 9 Unclear on MNS form

ADDITIONAL COMMENTS BY MOTHER

159	Mother smoked outside postnatal	0 N/A, non smoker 1 YES, smokes outside 2 No comment regarding issue
160	Others stopped smoking in pregnancy	0 N/A, non smokers 1 YES, smokes outside 2 No comment regarding issue
161	Others smoked outside in pregnancy	0 N/A, non smoker 1 YES, smokes outside 2 No comment regarding issue
162	Others smoked outside postnatal	0 N/A, non smoker 1 YES, smokes outside 2 No comment regarding issue

RESPONSE TYPE - CODING GUIDELINES, MULTIPAROUS WOMEN

163

Initial Response:
0
1 response to original mail questionnaire
2 response to 1st mail follow-up (M-fup) request
3 response to telephone follow-up (T-fup) request
4 arrived after T-fup - mother had stated questionnaire in post
5 late arriving questionnaire response to M-fup, not T-fup
6 non response following T-fup
7 return to sender (RTS) (mail returned unopened)
8 non response, (N-R) no phone for follow-up
9 withdrawn, poor English fluency

164

Telephone Follow-up
0 N/A
1 positive response from mother
2 unsure/guarded response from mother
3 requested new questionnaire
4 stated questionnaire in mail/already sent
5 phone response to WHOLE of questionnaire
6
7 withdrew from study
8 no longer live there, moved, address unknown, not \contactable
9 poor English fluency

165

Non-responders
0
1
2 RTS (return to sender) unable to follow-up no phone for follow-up
3 RTS - unable to follow-up - phone disconnected/changed/moved/not there
4 N-R (non-response) no phone for follow-up
5 N-R - phone disconnected/changed/moved/not there/ no answer
6 N-R - left state/country
7 N-R - 'out bush and unavailable', 'never came to phone' 'left message on answering machine'

166

Other information related to non-responders
0
1 withdrew on phone
2 difficulty speaking English on phone
3
4
5
6 withdrew - letter
7
8

FORMULAS A, B, C, D AND CALENDAR, refer to Appendix A pages 19-21.

APPENDIX C

The Western Australian Research Institute for Child Health Ltd

Affiliated with : The University of Western Australia, Princess Margaret Hospital for Children

A request to Child Health Nurses to participate in a research project.

Dear Colleague,

We are writing to request your participation in a research project aimed at investigating infant care practices particularly breast feeding, maternal smoking, infant sleeping position and dummy use. We wish to enquire about the advice on these practices given to parents in hospitals and by child health nurses, and midwives. Mothers of newborn infants will also be surveyed to ascertain their care practices and from where they received helpful information on infant care practices.

The study is a joint venture with the Western Australian Institute for Child Health (WARICH) and Edith Cowan University (ECU) and is part of a Post-graduate Honours Thesis in Nursing for Ms. Ann Callaghan. It has been subject to ethics review by ECU and review by the Confidentiality of Health Information Committee at the Health Department of Western Australia.

Regional Directors of Nursing for Community and Child Health have kindly agreed to forward on our behalf questionnaires to a random selection of child health nurses throughout Western Australia chosen simply according to random post codes. The researchers will adhere to strict confidentiality guidelines and will protect the privacy of all people participating in the study. At no time will you be identified, or any identifying information be provided to anyone other than the specified researchers. The Commissioner of Health has agreed that this research will provide a valuable benefit to the community.

Participation is voluntary. However, it is important that we receive as many responses as possible and we value your contribution to the study. We believe the information provided by the project will contribute to better understanding of maternal and child health.

We welcome any questions you may have about this study, so please feel free to contact Ann Callaghan during office hours on (09) 340 8680.

Thank you for your help.

Yours sincerely,

Ann M. Callaghan, RM.
(Honours candidate, ECU)

Professor Fiona Stanley
Director, WARICH
Professor of Paediatrics
University of Western Australia.

Dr. Anne Read
Research Officer

Postal address: GPO Box D184, Perth WA 6001. Registered Office: Princess Margaret Hospital for Children, Roberts Road, Subiaco WA 6008. A.C.N. 009 278 755

Telephone: (09) 340 8533 or direct (09) 340 _____. Facsimile (09) 388 3414
email: postmaster@chi.uwa.edu.au

QUESTIONNAIRE INSTRUCTIONS

1-4

To maintain your anonymity, we are not asking you to provide a formal written consent. The return of the questionnaire will indicate to us your consent to be in the study.

The covering invitation letter need not be returned with the questionnaire. You may keep it for your own interest.

Once the questionnaire has been completed please return it in the reply-paid envelope.

This questionnaire is divided into four sections. There are a number of similar questions, but we ask that you complete all questions.

Some questions will simply require a tick ☐ in the box, whereas others will need a brief written answer.

Tick only ONE box unless otherwise asked.

In which location do you currently work? (please tick one box)

Metropolitan area ☐ 5

Rural area ☐

6

Year of initial Child Health Nurse certification.

7-8

.....

Please indicate the number of years of practice in child health/community settings.

..... years. 9-10

Please indicate the total (combined) number of years you have spent working in maternal/child health, midwifery, and paediatric settings.

..... years. 11-12

SECTION ONE - BREAST FEEDING

☐☐☐☐ 13-16

Q1. Do you encourage breast feeding?

No ☐→ Go to Q3. ☐ 17

Yes ☐↓

Q2. Briefly describe the reason for the above answer.

..... ☐ 18

.....

.....

Q3. Has your advice/practice on breast feeding changed during your career as a child health nurse?

No ☐→ Go to Q5. ☐ 19

Yes ☐↓

Q4. If your advice/practice has changed, what factors contributed to this change?

..... ☐ 20

.....

.....Go to Q.6

Q5. If your advice/practice has not changed on breast feeding, what factors contributed to you continuing this advice strategy?

..... ☐ 21

.....

.....

Q6. Can you say approximately when you initiated your current advice/practice? ☐ 22

Within the past year ☐

Between 1-2 years ago ☐

Between 2-5 years ago ☐

More than 5 years ago ☐

Q7. What are the <u>four most important reinforcing factors or sources of information</u> that have influenced your present advice/practice regarding breast feeding?
To do this, place a number (1, 2, 3 or 4) in <u>four of the boxes</u> below so that:
1 = most important
2 = next or second most important
3 = third in importance
4 = fourth in importance

☐☐☐☐ 23-26

The list below is in alphabetical order.

☐☐ 27-28 ☐☐ 29-30
☐☐ 31-32 ☐☐ 33-34

* Articles in Professional Journals ☐
* Briefing from Area/District/Nurse Manager ☐
* Books, Pamphlets, Brochures ☐
* Conferences ☐
* Discussions with Nursing Colleagues ☐
* Doctors or Medical Profession ☐
* Further study/education (such as University, or Lactation courses etc.) ☐
* Health Department Memorandum ☐
* Organisations, Community (such as Nursing Mothers Association, or Other parent support groups) ☐
* Organisations, Professional (such as A.N.F.) ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Personal/Clinical Experience ☐

Q8. If there have been <u>other</u> factors or sources of information that have led you to determine specific care practice, briefly describe: ☐ 35

.....

.....

SECTION TWO - MATERNAL SMOKING

☐☐☐☐ 36-39

Q9. Briefly describe the advice you provide to mothers and expectant mothers on smoking during pregnancy and after confinement.

.....

.....

.....

☐ 40

Q10. Has your advice changed on maternal smoking during your career as a child health nurse?

No ☐→ Go to Q12.

Yes ☐↓

☐ 41

Q11. If your advice has changed, what factors contributed to this change?

.....

.....

.....Go to Q.13

☐ 42

Q12. If your advice has not changed on maternal smoking, what factors contributed to you continuing this advice strategy?

.....

.....

.....

☐ 43

Q13. Can you say approximately when you initiated your current advice?

☐ 44

Within the past year ☐

Between 1-2 years ago ☐

Between 2-5 years ago ☐

More than 5 years ago ☐

Q14. What are the <u>four most important reinforcing factors or sources of information</u> that have influenced your present advice regarding maternal smoking?

To do this, place a number (1, 2, 3 or 4) in <u>four of the boxes</u> below so that:
1 = most important
2 = next or second most important
3 = third in importance
4 = fourth in importance

The list below is in alphabetical order.

☐☐☐☐ 45-48

☐☐ 49-50 ☐☐ 51-52

☐☐ 53-54 ☐☐ 55-56

* Articles in Professional Journals ☐
* Briefing from Area/District/Nurse Manager ☐
* Books, Pamphlets, Brochures ☐
* Conferences ☐
* Discussions with Nursing Colleagues ☐
* Doctors or Medical Profession ☐
* Further study/education (such as University, or Lactation courses etc.) ☐
* Health Department Memorandum ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Organisations, Community (such as Nursing Mothers Association, or Other parent support groups) ☐
* Organisations, Professional (such as A.N.F.) ☐
* Personal/Clinical Experience ☐

Q15. If there have been <u>other</u> factors or sources of information that have led you to determine specific advice regarding maternal smoking, briefly describe:

.....

.....

☐ 57

SECTION THREE - INFANT SLEEPING POSITION

58-61

62

Q16. Briefly describe the advice you give mothers and expectant mothers about infant sleeping position, for example, on the tummy (prone), on the back (supine) or on the side (lateral).

.....

.....

.....

Q17. Has your advice/practice changed on infant sleeping posture during your career as a child health nurse?

63

No ☐→ Go to Q19.

Yes ☐

Q18. If your advice/practice has changed, what factors contributed to this change?

64

.....

.....

.....Go to Q.20

Q19. If your advice/practice has not changed on infant sleeping position, what factors contributed to you continuing this advice strategy?

65

.....

.....

.....

Q20. Can you say approximately when you initiated your current advice/practice?

66

Within the past year ☐

Between 1-2 years ago ☐

Between 2-5 years ago ☐

More than 5 years ago ☐

Q21. What are the <u>four most important reinforcing factors or sources of information</u> that have influenced your present advice/practice regarding infant sleeping positions?
To do this, place a number (1, 2, 3 or 4) in <u>four of the boxes</u> below so that: 1 = most important
2 = next or second most important
3 = third in importance
4 = fourth in importance

☐☐☐☐ 67-70

The list below is in alphabetical order.

☐☐ 71-72 ☐☐ 73-74
☐☐ 75-76 ☐☐ 77-78

* Articles in Professional Journals ☐
* Briefing from Area/District/Nurse Manager ☐
* Books, Pamphlets, Brochures ☐
* Conferences ☐
* Discussions with Nursing Colleagues ☐
* Doctors or Medical Profession ☐
* Further study/education (such as University, or Lactation courses etc.) ☐
* Health Department Memorandum ☐
* Organisations, Community (such as Nursing Mothers Association, or Other parent support groups) ☐
* Organisations, Professional (such as A.N.F.) ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Personal/Clinical Experience ☐

Q22. If there have been <u>other</u> factors or sources of information that have led you to determine specific care practice, please briefly describe:

☐ 79

.....

.....

<u>Please turn over to the last page for remaining questions.</u>

SECTION FOUR - DUMMY USE AND INFANT FINGER SUCKING: 80-83

Q1. What is your advice regarding dummy use? 84

.....

.....

Q2. Please briefly describe the reason for the above answer. 85

.....

.....

Q3. What is your advice regarding infant finger (thumb or fingers) sucking? 86

.....

.....

Q4. Please briefly describe the reason for the above answer. 87

.....

.....

****

Thank you for your help and interest in completing this questionnaire.

Please return this questionnaire in the reply-paid envelope **as soon as possible**.

CODING GUIDE - CHILD HEALTH NURSES AND MIDWIVES

Page 2

COLUMN	VARIABLE
1-4 ID Number IDNO	1000 primips 2000 multips 3000 midwives (MW) 4000 child health nurses (CHN) 5000 hospitals
5 Area of Practice	- ltfu 0 1 metropolitan 2 rural 3 combined rural & metropolitan 4 student/not working 7 no answer 8 don't know 9 unclear
6 Present Practice	
CHN	- ltfu 1 currently employed as CHN
MIDWIVES	- ltfu 0 midwife in independent practice 1 midwifery/neonatal 2 paediatric 3 child health nursing 4 general 5 not working, student 6 other 7 no answer 8 combination of 1, 2 & 3 above 9 unclear
7-8 Year of CHN/MW Certificate	- ltfu 00 2 digits = year 97 no answer 98 don't know 99 unclear

Page 2 continued

9-10 Number of years in CHN/MW practice	-- ltfu 00 2 digits = year/s 77 no answer 88 don't know 99 unclear

11-12 Total number of years in practice as CHN, MW, paediatric nurse	-- ltfu 00 2 digits = year/s 77 no answer 88 don't know 99 unclear

Page 3

13-16
IDNO

17 **Q1** Do you encourage Breast feeding (BF= breast feeding)	- ltfu 0 1 NO 2 YES 7 no answer 8 don't remember 9 unclear

18 **Q2** Why do you encourage BF	- ltfu 0 N/A (NO to Q1) 1 bond, best, natural, antibodies, economical 2 3 4 client choice 5 6 7 no answer 8 don't remember 9 unclear

19 **Q3** Has advice changed on BF	- ltfu 0 1 NO 2 YES 7 no answer 8 don't remember 9 unclear

Page 3 continued

20	**Q4**	
Contributing Factors to change in BF advice	- ltfu 0 N/A if NO to Q3 1 client preference/needs/choice/driven, general benefits 2 essential nutrition/immunity; geographic isolation (no other food) 3 personal and professional experience 4 no influences 5 professional/clinical experience, ongoing education/research, professional belief 6 personal experience - being a mother 7 no answer 8 cites SIDS research 9 unclear	
21	**Q5**	
Contributing factors to same BF advice	- ltfu 0 N/A if Q4 answered 1 client preference/needs/choice, general benefits 2 essential nutrients/immunity; geographic isolation (no other food) 3 personal and professional experience 4 no influences 5 professional/clinical experience, ongoing education/research, professional belief 6 personal experience - being a mother 7 no answer 8 cites SIDS research 9 unclear	
22	**Q6**	
Time introduced current advice BF	- 0 1 in past year 2 1-2 years ago 3 2-5 years 4 more than 5 years 5 ongoing 7 no answer 8 don't remember 9 unclear	

Page 4

23-26 IDNO	
27-28 **Q7/1** 29-30 **Q7/2** 31-32 **Q7/3** 33-34 **Q7/4**	
1st, 2nd, 3rd, 4th influencing factor (inf/fac) related to BF. (same answering structure in each of the sections).	-- ltfu 00 1-12 corresponding numbers USE dice for multiple/ticked answers 77 no answer 88 don't remember 99 unclear

Page 4 continued

35 **Q8**
Other inf/fac cited by CHN/MW for BF

- ltfu
0
1 cites protocol of hospital/HDWA in Q4/5
2 lactation consultant: NMAA counsellor
3
4 outside agency (professional)
5 use wide range of resources plus all categories listed
6
7 specific individual - doctor, external lactation consultant
8
9

Page 5

36-39
IDNO

---

40 **Q9**
Advice on maternal smoking

(MS = maternal smoking)

- ltfu
0
1 discourage, advise to stop, not in same room
2 SIDS prevention cited
3 vehement intolerance
4 only help if client is willing
5 consumer awareness
6 do not encounter such people, not applicable
7 no answer
8 don't remember
9 unclear

---

41 **Q10**
Changed advice on MS

- ltfu
0
1 NO
2 YES
7 no answer
8 don't remember
9 unclear

---

42 **Q11**
Contributing factors on MS advice

- ltfu
0 N/A if NO to Q 10
1 multiple, HDWA, QUIT, research, clinical experience, improved knowledge
2 number '1' and personal belief experience
3 parental and societies driven changes/practice
4 health related illness (e.g., delayed immunisation due to repeated URTI)
5 client choice (provide brochures/information), protection of non-smoker
6 personal belief/practice
7 no answer
8 cites SIDS research
9 unclear

Page 5 continued

43 **Q12**	
Contributing factors for same advice on MS	- ltfu 0 N/A if Q11 answered 1 multiple, HDWA, QUIT, research, clinical experience, improved knowledge 2 No. 1 and personal belief 3 parental and societies driven changes/practice 4 health related illness (e.g., delayed immunisation due to repeated URTI) 5 client choice (provide brochures/information), protection of non-smoker 6 personal belief/practice 7 no answer 8 cites SIDS research 9 unclear
44 **Q13**	
Time introduced current advice on MS	- ltfu 0 1 in past year 2 1-2 years ago 3 2-5 years 4 more than 5 years 5 ongoing 6 specific since SIDS information 7 no answer 8 don't remember 9 unclear

Page 6

45-48
IDNO

49-50 **Q14/1** 50-51 **Q14/2** 52-53 **Q14/3** 54-55 **Q14/4** 1st 2nd 3rd 4th inf/fac related to MS	-- ltfu 00 1-12 corresponding numbers USE dice for multiple/ticked answers 77 no answer 88 don't remember 99 unclear
57 **Q15**	
other inf/fac for MS	- ltfu 0 1 health related, illness (e.g., asthma/bronchial problems) 2 environmental issue, right to clean air, consumer awareness 3 actively involved in reduce smoking campaigns 4 5 practices as a homoeopath, experience from this 6 QUIT programme in particular. 7 8 9

Page 7

58-61
IDNO

---

62 **Q16**
Advice on sleeping position (SP = sleeping position)

- ltfu
0
1 side, back, side/back, NOT PRONE
2 prone
3 order of preference: lateral then prone, not supine
4
5
6 any position, however, not supine
7 no answer
8 don't remember
9 unclear

---

63 **Q17**
Advice Change for SP

- ltfu
0
1 NO
2 YES
3 NO, recently graduated
7 no answer
8 don't remember
9 unclear

---

64 **Q18**
Contributing factors to change in advice on SP

- ltfu
0 N/A if NO Q17
1 SIDS Advice/information/directives from managers/official protocol
2 parental awareness of SIDS information and No. 1
3 research, up to date information, SIDS not stated
4 long standing professional practice now backed by research
5 professional/personal opinion not backed by research
6 personal experience/practice from own children plus recent research
7 no answer
8 research proving prone not dangerous
9 unclear

---

65 **Q19**
Contributing factors for same advice on SP

- ltfu
0 N/A if Q18 answered
1 SIDS advice/information/directives from managers/official protocol
2 parental awareness of SIDS information plus No.1
3 research, up to date information, SIDS not stated
4 long standing professional practice now backed by research
5 professional/personal opinion not backed by research
6 personal experience/preference with own children plus recent research
7 no answer
8 research proving prone not dangerous
9 unclear

Page 7 continued

66 **Q20**
Time introduced current advice on SP

- ltfu
0
1 in past year
2 1-2 years ago
3 2-5 years
4 more than 5 years
5 ongoing
6 specific since SIDS INFO
7 no answer
8 don't remember
9 unclear

Page 8

67-70
IDNO

71-72 **Q21/1**
73-74 **Q21/2**
75-76 **Q21/3**
77-78 **Q21/4**
1st 2nd 3rd 4th inf/fac related to SP

-- ltfu
00
1-12 corresponding number
USE dice for multiple/ticked answers
77 no answer
88 don't remember
99 unclear

---

79 **Q22**
Other inf/fac for SP

- ltfu
0
1 SIDS research
2 no answer given to inf/fac above, previously cites SIDS
4 policy on gastric reflux
5 family tradition of care practice
6 difficult advice to give - contrary to own experience as a mother
7 no answer
8 don't remember
9 unclear

Page 9 **FINAL PAGE - DUMMY USE AND FINGER SUCKING**

80-83
IDNO

---

84 **Q1**
Advice on dummy use
(DU = dummy use)

- ltfu
0 client choice
1 no, generally not recommended, avoid, discourage, last resort
2 ambivalent: positive and negative - depends on child
3 conditional: specific applications/circumstances only
4 recommend use
5 no advice
9 unclear/unanswered

---

85 **Q2**

Why this type of advice on DU

- ltfu
0 positive: normal development, child/maternal needs
1 negative: multiple negative categories, potential problems
2 advice not appropriate/never given advice/never approached
3 negative: feeding problems, tires babe, nipple confusion, wont settle
4 negative: may conceal underlying problem
5 negative: may delay verbal communication or jaw formation
6 specific advice: no honey/prevent caries, not before feed, pacifier only
7 limit: time, frequency, use, age, not when sleeping break habit
8 ambiguous: positive and negative responses
9 unclear, no response

---

86 **Q3**

Advice on finger sucking (FS = finger sucking)

- ltfu
0 client choice, acceptable behaviour
1 no, generally not recommended, avoid, discourage
2 ambiguous: positive/negative; newborn will suck anything -depends on child
3 conditional: specific applications/circumstances only
4
5 no advice
9 no answer

---

87 **Q4**

Why this type of on FS

- ltfu
0 positive: normal development child/maternal needs
1 positive: normal development, prolonged/excessive use may cause jaw/teeth problems
2 never give advice, not appropriate/ never approached
3 negative: prolong/excessive use may cause jaw & teeth problem
4 negative: investigate excessive use, may be underlying problem
5 set time limit of one year if habit persists
6 specific advice: not when asleep; check if baby hungry
7 try break habit/discontinue as soon as possible, discourage long term use
8 ambiguous: positive and negative responses
9 unclear, no response

---

88 **Additional coding**

Preference noted of DU or FS

- ltfu
0 DU better/preferable to FS
1 DU worse/less preferable to FS
2 DU easier to break habit than FS
3 DU harder to break habit than FS
4 DU better and easier to break habit than FS
5 DU worse and harder to break habit than FS
6 cites SIDS research
7 no comment regarding the issue
8 FS - less chance of sugar products being added
9

APPENDIX D

The Western Australian Research Institute for Child Health Ltd

Affiliated with: The University of Western Australia, Princess Margaret Hospital for Children

A request to Midwives to participate in a research project.

Dear Colleague,

We are writing to request your participation in a research project aimed at investigating infant care practices particularly breast feeding, maternal smoking infant sleeping position and dummy use. We wish to enquire about the advice on these practices given to parents in hospitals and by midwives and child health nurses. Mothers of newborn infants will also be surveyed to ascertain their care practices and from where they received helpful information on infant care practices.

The study is a joint venture with the Western Australian Institute for Child Health (WARICH) and Edith Cowan University (ECU) and is part of a post-graduate Honours Thesis in Nursing for Ms. Ann Callaghan. It has been subject to ethics review by ECU and review by the Confidentiality of Health Information Committee at the Health Department of Western Australia.

The Nurses Board of Western Australia has kindly agreed to select from their Register, a random group of midwives throughout Western Australia. They have also undertaken the postal distribution of the questionnaire on our behalf to ensure anonymity of the midwives. The researchers will adhere to strict confidentiality guidelines and will protect the privacy of all people participating in the study. At no time will you be identified, or any identifying information be provided to anyone other than the specified researchers. The Commissioner of Health has agreed that this research will provide a valuable benefit to the community.

Participation is voluntary. However, it is important that we receive as many responses as possible and we value your contribution to the study. We believe the information provided by the project will contribute to better understanding of maternal and child health.

We welcome any questions you may have about this study, so please feel free to contact Ann Callaghan during office hours on (09) 340 8680.

Thank you for your help.

Yours sincerely,

Ann M. Callaghan, RM.
(Honours candidate, ECU)

Professor Fiona Stanley
Director, WARICH
Professor of Paediatrics
University of Western Australia.

Dr. Anne Read
Research Officer

Postal address: GPO Box D184, Perth WA 6001. Registered Office: Princess Margaret Hospital for Children, Roberts Road, Subiaco WA 6008. A.C.N. 009 278 755

Telephone: (09) 340 8533 or direct (09) 340 _____. Facsimile (09) 388 3414
email: postmaster@chi.uwa.edu.au

QUESTIONNAIRE INSTRUCTIONS

To maintain your anonymity, we are not asking you to provide a formal written consent. The return of the questionnaire will indicate to us your consent to be in the study.

The covering invitation letter need not be returned with the questionnaire. You may keep it for your own interest.

Once the questionnaire has been completed, please return it in the reply-paid envelope.

This questionnaire is divided into four sections. There are a number of similar questions, but we ask that you complete all questions.

Some questions will simply require a tick ☑ in the box, whereas others will need a brief written answer.

Tick only ONE box unless otherwise asked.

In which location do you currently work? (please tick one box) 5

- Metropolitan area ☐
- Rural area ☐

In which area of nursing/midwifery do you currently work? 6

- Midwifery/Neonatal ☐
- Paediatric ☐
- Child Health ☐
- General ☐
- Not Working ☐
- Other, describe ☐

.....

Year of initial Midwifery certification 7-8

Please indicate the number of years of practice as a midwife.

..... years. 9-10

Please indicate the total (combined) number of years you have spent working in midwifery child health and paediatric settings. 11-12

..... years.

SECTION ONE - BREAST FEEDING

☐☐☐☐ 13-16

Q1. Do you encourage breast feeding?

☐ 17

No ☐→ Go to Q3.
Yes ☐
↓

Q2. Please briefly describe the reason for the above answer.

☐ 18

.....

.....

.....

Q3. Has your advice/practice on breast feeding changed during your career as a midwife?

☐ 19

No ☐→ Go to Q5.
Yes ☐
↓

Q4. If your advice/practice has changed, what factors contributed to this change?

☐ 20

.....

.....

.....Go to Q.6

Q5. If your advice/practice has not changed on breast feeding, what factors contributed to you continuing this advice strategy?

☐ 21

.....

.....

.....

Q6. Can you say approximately when you initiated your current advice/practice?

☐ 22

Within the past year ☐
Between 1-2 years ago ☐
Between 2-5 years ago ☐
More than 5 years ago ☐

Q7. What are the <u>four most important reinforcing factors or sources of information</u> that have influenced your present advice/practice regarding breast feeding?

To do this, place a number (1, 2, 3 or 4) in <u>**four of the boxes**</u> below so that:
1 = most important
2 = next or second most important
3 = third in importance
4 = fourth in importance
This will mean that most of the boxes will be without numbers.

The list below is in alphabetical order.

23-26 27-28 29-30 31-32 33-34

* Articles in Professional Journals ☐
* Briefing from Area/District/Nurse Manager ☐
* Books, Pamphlets, Brochures ☐
* Conferences ☐
* Discussions with Nursing Colleagues ☐
* Doctors or Medical Profession ☐
* Further study/education (such as University, or Lactation courses etc.) ☐
* Health Department Memorandum ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Organisations, Community (such as Nursing Mothers Association, or Other parent support groups) ☐
* Organisations, Professional (such as A.N.F.) ☐
* Personal/Clinical Experience ☐

Q8. If there have been <u>other</u> factors or sources of information that have led you to determine specific care practice, please briefly describe:

35

.....

.....

SECTION TWO - MATERNAL SMOKING

☐☐☐☐ 36-39

Q9. Please briefly describe the advice on smoking during pregnancy and after confinement you provide to mothers and expectant mothers.

.....

.....

.....

☐ 40

Q10. Has your advice changed on maternal smoking during your career as a midwife?

No ☐→ Go to Q12.

Yes ☐↓

☐ 41

Q11. If your advice has changed, what factors contributed to this change?

.....

.....

.....Go to Q.13

☐ 42

Q12. If your advice has not changed on maternal smoking, what factors contributed to you continuing this advice strategy?

.....

.....

.....

☐ 43

Q13. Can you say approximately when you initiated your current advice?

Within the past year ☐

Between 1-2 years ago ☐

Between 2-5 years ago ☐

More than 5 years ago ☐

☐ 44

Q14. What are the <u>four most important reinforcing factors or sources of information</u> that have influenced your present advice regarding maternal smoking?

To do this, place a number (1, 2, 3 or 4) in **<u>four of the boxes</u>** below so that: 1 = most important
2 = next or second most important
3 = third in importance
4 = fourth in importance

This will mean that most of the boxes will be without numbers.

The list below is in alphabetical order.

* Articles in Professional Journals ☐
* Briefing from Area/District/Nurse Manager ☐
* Books, Pamphlets, Brochures ☐
* Conferences ☐
* Discussions with Nursing Colleagues ☐
* Doctors or Medical Profession ☐
* Further study/education (such as University, or Lactation courses etc.) ☐
* Health Department Memorandum ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Organisations, Community (such as Nursing Mothers Association, or Other parent support groups) ☐
* Organisations, Professional (such as A.N.F.) ☐
* Personal/Clinical Experience ☐

Q15. If there have been <u>other</u> factors or sources of information that have led you to determine specific advice on smoking please briefly describe:

.....

.....

☐☐☐☐ 45-48

☐☐ 49-50 ☐☐ 51-52

☐☐ 53-54 ☐☐ 55-56

☐ 57

SECTION THREE - INFANT SLEEPING POSITION

☐☐☐☐ 58-61

Q16. Please briefly describe the advice you give mothers and expectant mothers about infant sleeping position, for example, on the tummy (prone), on the back (supine) or on the side (lateral)? ☐ 62

.....

.....

.....

Q17. Has your advice changed on infant sleeping posture during your career as a midwife?

No ☐→ Go to Q19. ☐ 63

Yes ☐↓

Q18. If your advice/practice has changed, what factors contributed to this change? ☐ 64

.....

.....

.....Go to Q.20

Q19. If your advice/practice has not changed on sleeping position, what factors contributed to you continuing this advice strategy? ☐ 65

.....

.....

.....

Q20. Can you say approximately when you initiated your current advice/practice? ☐ 66

Within the past year ☐

Between 1-2 years ago ☐

Between 2-5 years ago ☐

More than 5 years ago ☐

Q21. What are the <u>four most important reinforcing factors or sources of information</u> that have influenced your present advice/practice regarding infant sleeping positions?

☐☐☐☐ 67-70

To do this, place a number (1, 2, 3 or 4) in <u>four of the boxes</u> below so that:

1 = most important
2 = next or second most important
3 = third in importance
4 = fourth in importance

This will mean that most of the boxes will be without numbers.

☐☐ 71-72 ☐☐ 73-74

The list below is in alphabetical order.

☐☐ 75-76 ☐☐ 77-78

* Articles in Professional Journals ☐
* Briefing from Area/District/Nurse Manager ☐
* Books, Pamphlets, Brochures ☐
* Conferences ☐
* Discussions with Nursing Colleagues ☐
* Doctors or Medical Profession ☐
* Further study/education (such as University, or Lactation courses etc.) ☐
* Health Department Memorandum ☐
* Media: Television, Radio, Newspapers or Magazines ☐
* Organisations, Community (such as Nursing Mothers Association, or Other parent support groups) ☐
* Organisations, Professional (such as A.N.F.) ☐
* Personal/Clinical Experience ☐

Q22. If there have been <u>other</u> factors or sources of information that have led you to determine specific care practice, please briefly describe:

☐ 79

.....

.....

<u>Please turn over to the last page for remaining questions.</u>

80-83

SECTION FOUR - DUMMY USE AND INFANT FINGER SUCKING

Q1. What is your advice regarding dummy use? 84

.....

.....

Q2. Please briefly describe the reason for the above answer. 85

.....

.....

Q3. What is your advice regarding infant finger (thumb or fingers) sucking? 86

.....

.....

Q4. Please briefly describe the reason for the above answer. 87

.....

.....

****

Thank you for your help and interest in completing this questionnaire.

Please return this questionnaire in the reply-paid envelope **as soon as possible.**

CODING GUIDE - MIDWIVES

Refer to Appendix C pages 10-17 for coding guidelines for midwives

APPENDIX E

The Western Australian Research Institute for Child Health Ltd

Affiliated with: The University of Western Australia, Princess Margaret Hospital for Children

A request to hospitals to participate in a Research Project

Director of Nursing

Dear Director of Nursing

We are writing to request your participation in a research project aimed at investigating infant care practices particularly breast feeding, maternal smoking and infant sleeping position. We wish to enquire about the advice on these practices given to parents in hospitals and by child health nurses and midwives. Mothers of newborn infants will also be surveyed to ascertain their care practices and from whom they received helpful information on infant care practices.

The study is is a joint venture with the Western Australian Research Institute for Child Health with Professor Fiona Stanley and Edith Cowan University and is part of a Post-graduate Honours Thesis in Nursing for Ms. Ann Callaghan.

All maternity hospitals and hospitals caring for young babies in Western Australia are being surveyed. This study has been subject to ethics review by Edith Cowan University and review by the Confidentiality of Health Information Committee at the Health Department of Western Australia. The researchers will adhere to strict confidentiality guidelines and will protect the privacy of all people participating in the study. At no time will you or your institution be identified or any identifying information be provided to anyone other than the specified researchers. The Commissioner of Health has agreed that this research will provide an important benefit to the community. All that is asked of you is to kindly fill in the attached short questionnaire.

Postal address: GPO Box D184, Perth WA 6001. Registered Office: Princess Margaret Hospital for Children, Roberts Road, Subiaco WA 6008. A.C.N. 009 278 755

Telephone: (09) 340 8533 or direct (09) 340 _____. Facsimile (09) 388 3414
email: postmaster@chi.uwa.edu.au

▼

Participation is voluntary. However, it is important that we receive as many responses as possible and we value your participation in the study. We believe the information this provided by the project will contribute to a better understanding of child and maternal health.

We would welcome any questions you may have about this study, so please feel free to contact Ann Callaghan during office hours on (09) 340 8680.

We look forward to hearing from you.

Yours sincerely,

Ann M. Callaghan
(Honours Candidate ECU)

Professor Fiona Stanley
Director (WARICH)
Professor of Paediatrics
University of Western
Australia.

Dr. Anne Read
Research Officer

Please do not write in this column

1-4

INFORMATION PAGE

We are not asking you to provide a formal written consent. The return of this questionnaire will indicate to us your consent to be in the study.

You may keep the introductory letter for your own interest, however, it is important that you include this page in your response.

RESEARCH REQUEST:

Can you please provide copies of your hospital's policy guidelines on the following topics:

a. Infant feeding, particularly with regard to breast feeding and newborn babies. 5-6

b. Maternal smoking, during pregnancy, and following the birth of the baby. 7-8

c. Infant sleeping positions. 9-10

Please indicate the date when the relevant policies were initiated by your hospital.

a. On breast feeding 11-14

b. On maternal smoking 15-18

c. On infant sleeping positions 19-22

Thank you for your time and interest in this study.

Please return **this page and the policies** in the enclosed pre-paid envelope.

CODING GUIDELINES - HOSPITALS

BREAST FEEDING

1-4
IDNO

5
Policy/guidelines on breast feeding (BF)

- ltfu
0 withdrawal
1 cites specific guidelines/policy/statements/written information
2 cites associations - NMA, WHO, College of Midwives, lactation courses
3 cites mechanics, though does not specifically state 'encourages BF'
4 encourages, no other information provided
5 unclear regarding guidelines/policy, verbal guidelines in place
6
7 missing data/information, no answer (however, answered other questions)
8 NO policy, or no comment, N/A, or not available
9 unclear response

6
Reported review or updating of policy on breast feeding in progress

- ltfu
0 withdrawal
1 = No. 1, 2, & 3 answers in segment above
2 = No. 4 in answers above, unable to ascertain policy/guidelines or intentions
3 policy being formulated/created/reviewed and interim/specific guidelines in place
4 policy being formulated/created/reviewed, however, no other information provided
5
6
7 no data, missing, or unanswered information
8 = No. 8 answer in answers above - when N/A, no policy, no comment, not available
9 unclear

11-12
Date of policy on breast feeding

- ltfu
0 withdrawn
1 date not stated - cites current reference/advice
2 date not stated - advice appears current
3 date not stated, unclear what advice is given
4 NO policy/guidelines/protocol
5
6
7 missing data, no answer
8
9 unclear
** year advice introduced (e.g., '77 or '88)

MATERNAL SMOKING

7
Policy/guidelines on maternal smoking (MS)

- ltfu
0 withdrawn
1 cites specific guidelines/policy/statements/written information
2 cites HDWA, QUIT, brochures, circulars
3 cites advice, though not specifically that MS is discouraged
4 discourages MS, no other information provided
5 discourages MS, unclear regarding policy/guidelines, verbal guidelines in place
6 only comments on NO SMOKING in hospital
7 missing data/information, no answer
8 NO policy, or no comment, N/A, or not available
9 unclear

8
Reported review or updating of policy on maternal smoking in progress

- ltfu
0 withdrawn
1 = No. 1, 2, 3 answers in segment above
2 = No. 4 or 5 answers above, unable to ascertain policy/guidelines above
3 policy being formulated/created/reviewed and interim/specific guidelines in place
4 policy being formulated/created/reviewed, however no other information provided
4 NO SMOKING in hospital
5 general advice plus NO SMOKING in hospital
6
7 no answer, missing data
8 = No. 8 in answer above - when N/A, no policy, no comment, not available
9 unclear

13-14
Date of policy on maternal smoking

- ltfu
0 withdrawn
1 date not stated - cites current reference/advice
2 date not stated - advice appears current
3 date not stated, unclear what advice is given
4 NO SMOKING in hospital
5 no/unclear policy/guidelines, however, NO SMOKING in hospital
6
7 missing data / no answer
8 NO policy/guidelines/protocol
9 unclear
** year advice introduced (e.g., '77 or '88)

SLEEPING POSITION

9

Policy/guidelines on infant sleeping position (SP)

- ltfu
0 withdrawn
1 cites specific guidelines/policy/written information
2 cites associations, SIDS Foundation, HDWA
3 cites, non-prone (i.e., lateral/side only)
4
3 unclear, follow guidelines - unclear which guidelines, guidelines in place
4
5
6
7 missing data/information, no answer
8 NO policy, no comment, N/A or not available
9 unclear

10

Reported review or updating of policy on infant sleeping position in progress

- ltfu
0 withdrawn
1 = No. 1, 2, answers in segment above
2 = No. 3 answer above, unable to ascertain policy
3 policy being formulated/created/reviewed and interim/specific guidelines in place
4 policy being formulated/created/reviewed, however, no other information provided
5
6
7 no data, no answer
8 = No.8 in answers above - when N/A, no policy, no comment, not available
9 unclear

15-16

Date of policy of SP

- ltfu
0 withdrawn
1 date not stated, encourages non-prone - cites current reference/advice
2 date not stated, encourages non-prone - advice appears current
3 date not stated - unclear what advice is given
4 NO policy/guidelines/protocol
5
6
7 missing data, no answer
8
9 unclear
** year advice introduced (e.g., '77 or '88)

APPENDICES F, G, H & I

EDITH COWAN UNIVERSITY
PERTH WESTERN AUSTRALIA
CLAREMONT CAMPUS

Office of Research and Development

Goldsworthy Road, Claremont
Western Australia 6010
Telephone (09) 383 0333
Facsimile (09) 383 1786

6 August 1993

APPENDIX F

Ms Ann Callaghan
[redacted]

Dear Ms Callaghan,

Thank you for your response to my letter advising you of a few minor issues which had been raised when the Committee for the Conduct of Ethical Research considered your reserch proposal.

I had earlier conveyed to you the Committee's opinion that your project was addressing an important health issue and that you were planning to do so in a very professional manner.

Now that you have provided evidence of having attended to the relatively minor aspect of research protocol, I am pleased to advise that the Committee has confirmed ethical clearance for your project to proceed.

We wish you well for a successful outcome to this research project.

Yours sincerely,

Rod Crothers
Executive Officer
Committee for the Conduct of Ethical Research
Ref. 93-48/7

cc: Ms G. Richardson
Dr A. Read
Gerrie Sherratt

APPENDIX G

Prof Fiona Stanley
Director, WARICH
GPO Box D184
PERTH WA 6001

Dear Fiona

9 June 1993

A SURVEY OF RISK FACTORS FOR SIDS (#93006)

The protocol for the above project was reviewed by the Confidentiality of Health Information Committee on behalf of the Commissioner of Health.

Conditional approval was granted to Dr Anne Read and yourself for access to the Midwives' Notification System for the purposes of the above project subject to:

- Ethics committee approval (Faculty higher degrees committee approval only was obtained), and a copy of the approval being sent to CHIC;
- mothers whose babies have died not being approached;
- WARICH providing some assurance that methods are employed to ensure that mothers included in other WARICH studies are not approached unless it is necessary. (This implies some mechanism of identifying contacts of different studies).

Only authorised staff of WARICH are granted access to the Midwives' Notification System and not students.

CHIC does not have jurisdiction over release of names of hospitals, Directors of Nursing and child health nurses. These groups need to be approached directly through the hospitals, Nurses Board and Community and Child Health Services.

There has been some concern expressed in the past by Country Regional Directors regarding the contacting of departmental staff. It may be considered appropriate for initial contact to be made with the relevant director(s).

With regard to the data, at the completion of the project, CHIC, on behalf of the Commissioner of Health, authorises retention of data necessary for authentication of research as prescribed by the AVCC, under the same confidentiality requirements as per the conduct of the research.

CHIC has a mandate to monitor the use of any data released for access. This monitoring includes the possibility of spot personal visits, and a reporting of the outcome of the project will be required at the completion of the project. A form regarding this will be sent to you at that time.
Yours sincerely

Myra Cake
CHAIRPERSON

Dr Ian Rouse
COMMISSIONER'S REPRESENTATIVE

CONFIDENTIALITY OF HEALTH INFORMATION COMMITTEE

cc Vivien Gee (Midwives' Notification System)

NURSES BOARD OF WESTERN AUSTRAL

49 STIRLING HIGHWAY, NEDLANDS, W.A.
TELEPHONE: 386 8656
P.O. Box 336,
Nedlands — Western Australia 6009
Telegrams & Cables "Nursesboard" Perth

12th July, 1993.

IN REPLY PLEASE QUOTE BH:hk

APPENDIX H

Ms. A.M. Callaghan,
The Western Australian Research Institute for
Child Health Ltd.,
c/- Princess Margaret Hospital for Children,
G.P.O. Box D184,
PERTH W.A. 6001.

Dear Ms. Callaghan,

I write to advise that the Board at its meeting of 7th July, 1993, recommends -

> That Ann M. Callaghan's request for access to the Register for research be approved, subject to the receipt of an indication of control for bias in her research sample, a revised questionnaire and confirmation of approval from the Edith Cowan University Ethics Committee.

I acknowledge that all of these conditions have been addressed within your correspondence of 2nd July, 1993.

Please direct your enquiries now to Mrs. Marilyn Bujevich, the Office Manager.

The Board looks forward to receiving information from your research findings in due course and wishes you success in your studies.

Yours sincerely,

Barbara Horner
ACTING CHIEF EXECUTIVE OFFICER

APPENDIX I

Special and ethical conditions laid down by the various committees:

1) In consideration of the possible concern and anxiety that could have arisen, permission was given to exclude any reference to 'Sudden Infant Death Syndrome' (CCER).

2) Mothers and or infants who were already part of other studies carried out by the Western Australian Research Institute for Child Health were to be excluded from the study (CHIC).

3) The mothers of infants who had died since birth were not to be approached to be in the study (CHIC).

4) Named data and questionnaires will be destroyed by the researcher after seven years as laid down by CCER and CHIC.