

1-1-1993

A comparison of three midwifery interventions on the continuity and knowledge of breast feeding

Athalie Johnston
Edith Cowan University

Follow this and additional works at: <https://ro.ecu.edu.au/theses>



Part of the [Nursing Midwifery Commons](#)

Recommended Citation

Johnston, A. (1993). *A comparison of three midwifery interventions on the continuity and knowledge of breast feeding*. Edith Cowan University. Retrieved from <https://ro.ecu.edu.au/theses/1144>

This Thesis is posted at Research Online.
<https://ro.ecu.edu.au/theses/1144>

Edith Cowan University

Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

**A COMPARISON OF THREE MIDWIFERY INTERVENTIONS ON THE
CONTINUITY AND KNOWLEDGE OF BREAST FEEDING.**

BY

**Athalie Johnston
Bachelor of Health Science, Nursing (Honours)**

**A Thesis Submitted in Fulfilment of the
Requirements for the Award of**

Master of Nursing

at the School of Nursing, Edith Cowan University

Date of Submission: 28th September 1993.

A COMPARISON OF THREE MIDWIFERY INTERVENTIONS ON THE
CONTINUITY AND KNOWLEDGE OF BREAST FEEDING.

Athalie Johnston

Edith Cowan University

Abstract

Although it is widely recognised that breast milk is biologically perfect to provide nutrition for the newborn infant, many new mothers do not continue to breast feed throughout the postpartum period. A possible influencing factor is the decreased length of hospital stay, whereby new mothers are discharged home away from the supportive-educative role of the midwife before they are ready to learn the art of breast feeding. The purpose of this study was to determine the influence of three midwifery interventions on the continuity and knowledge of first time breast feeding mothers at 6 weeks postpartum.

A convenience sample of 162 first time breast feeding mothers was divided into three groups: conventional discharge ($n = 59$), teaching intervention ($n = 51$) and planned early discharge ($n = 52$). Mothers and babies in all groups were well and declared fit for discharge on day 3 postpartum. Using a quasi experimental, post-test-only design two questionnaires were completed, one at a personal interview prior to discharge from hospital and one telephone interview at 6 weeks postpartum.

At 6 weeks postpartum it was found that only 63% of subjects were successfully breast feeding. Those that were

successfully breast feeding also had a significantly higher breast feeding knowledge ($p = <.01$). Although more subjects in the planned early discharge group were still breast feeding there was no significant difference between the three groups ($p = >.05$). On the other hand, there was a significant difference between the breast feeding knowledge of subjects in the three groups ($p = <.05$) with those subjects in the planned early discharge group having greater breast feeding knowledge. Data analysis also revealed that age and income had a significant relationship to both successful breast feeding and breast feeding knowledge while level of education only influenced breast feeding knowledge.

Subjects in the planned early discharge group were very satisfied with their care and verbalised appreciation for the opportunity to speak with the visiting midwife in their own home. It was concluded that postpartum education programs need to be developed that take social factors such as age, income and education into account. Planned early discharge with domiciliary visits from hospital midwives is a way to increase the exposure of new parents to the supportive educative role of the midwife with the potential to increase the rate of continuity of successful breast feeding.

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.

ACKNOWLEDGMENTS

I would like to thank the management of Osborne Park Hospital for allowing me to use their facilities to conduct this research. My appreciation also goes to the management and my fellow midwives for their encouragement and support. I would particularly like to mention Jennifer Pitcher and Shelagh Lawrence whose support and enthusiasm played a major part in completion of this study.

Special thanks go to my supervisors at Edith Cowan University, namely Dr Patricia Percival, Judith Davis and Gerry Farrell, whose support, patience and guidance were paramount in the completion of this study. Again, I wish to thank Amanda Blackmore who assisted me with analysis of the data.

I would also like to acknowledge the encouragement from my mother and my children who respected my need to complete the study. Special thanks to my son Cameron for his assistance with the computer and to Paula for her patience. To my friend Gordon, thank you for your encouragement and patience.

Finally, I would like to express my appreciation to the mothers who participated in this study. Without their cooperation this study would not have been possible.

TABLE OF CONTENTS

	Page
Abstract	ii
Declaration	iv
Acknowledgments	v
List of Tables	ix
List of figures	x
Appendix	xi
Chapter	
1 INTRODUCTION	1
The problem	4
The purpose	5
Questions for study	6
Significance of study	8
Definition of terms	9
Summary	10
Structure of thesis	11
2 LITERATURE REVIEW	13
Breastfeeding	14
Continuity of breastfeeding	15
Timing of education	17
Midwifery care	19
Early postpartum discharge	20
Conclusion	22
Summary	24
3 THEORETICAL FRAMEWORK	26
Maternal self care	27
Role of dependent care agent	28
Supportive-educative nursing system	29
Summary	31
4 METHODS AND PROCEDURES	33
Design	33
Setting	33
Subjects	34
Assumptions	36
Instruments	37
Validity and reliability	39
Data collection	40
Teaching intervention	41

Chapter	Page
Data analysis	42
Limitations of study	44
Ethical considerations	46
5 RESULTS	48
Study sample	48
Feeding method	51
Research question 1	52
When artificial feeding commenced	53
Reason for cessation of breast feeding	54
Summary for question 1	54
Breast feeding knowledge	55
Research question 2	56
Summary for question 2	57
Research question 3	57
Age	57
Race	58
Marital status	58
Level of education	58
Level of family income	59
Type of birth	60
Day of hospital discharge	61
Home support	61
Summary for question 3	62
Hospital instruction	62
Visit to health professionals	63
Research question 4	66
Reason for participation	66
Midwife visits	67
Summary for question 4	68
Summary	68
6 DISCUSSION	70
Feeding method and breast feeding knowledge	71
Difference between nursing interventions	71
Breast feeding rate	71
Breast feeding knowledge	73
Reason for artificial feeding	76
Demographic characteristics	78
Age	78
Race	79
Level of education	80
Income	80
Support	82
Hospital instruction	82

Chapter	Page
Visit to other health professionals	83
Early discharge program	84
7 CONCLUSION	86
Implications for midwifery practice	88
Recommendations for further research	90
REFERENCES	92

LIST OF TABLES

Table	Page
1. Level of Education	49
2. Level of Family Income	50
3. Feeding Method at 6 Weeks Postpartum	51
4. Mothers Breast Feeding in Each Group	52
5. Time Artificial Feeding Commenced	53
6. Reason for Cessation of Breast Feeding	54
7. Knowledge Scores at 6 Weeks Postpartum	55
8. Knowledge Scores by Group at 6 Weeks Postpartum	56
9. Home Support in First Weeks at Home	61
10. Health Professionals/Allied Health Consulted in the Post Natal Period	64
11. Number of Midwives Seen at Home	67
12. Mean Age of First Time Mothers	78

LIST OF FIGURES

Figure	Page
1. Diagrammatical Format for Research	7
2. Diagram of Theoretical Concept	32
3. Knowledge Scores Related to Annual Income	60
3. Visits to Health Professionals	64

LIST OF APPENDICES

Appendix	Page
A. Let's look at breast feeding	100
B. Breast feed and shape up	101
C. Breast feeding: Positioning baby at the breast.	102
D. Teaching intervention objectives	104
E. Questionnaire 1	105
F. Questionnaire 2	107
G. Criteria for scoring questions	111
H. Information sheet	112
I. Letter from participating hospital	113
J. Letter from Head of Obstetrics	114

CHAPTER ONE

Research studies indicate an increase in the incidence of the initiation of breast feeding since the 1970's. They suggest however, that in many cases, breast feeding only continues for a short time after discharge from hospital (Hewat and Ellis, 1986; Jones, West and Newcombe, 1986). For example, in Western Australia, Bailey and Sherriff (1992) found only 51.11% of mothers breast feeding at 4 weeks post partum, while Percival (1990) found 69.3% still breast feeding at 7 weeks post partum. This is of concern to health professionals as it is widely recognised that breast milk is biologically perfect to provide the newborn infant with a healthy start in life. Although any breast feeding is advantageous, for optimal infant health, breast feeding should continue for as long as possible after discharge from hospital. A minimal time period of 4 to 6 months is recommended by the National Health and Medical Research Council (1985). The need for a midwifery intervention to encourage this continuity is crucial.

Breast feeding not only provides optimal nutrition for the new born baby, but is also a source of immunological, anti-

allergic and anti-infective factors (Lindenberg, Artola and Jimenez, 1990). Although relatively hygienic environments and clean water supplies in developed countries have made modern formulae safer to use, breast fed infants still have a lower morbidity rate. This perspective has been identified by Baghurst (1988) and Foskitt (1992) who noted that a definite health advantage was gained by breast feeding in comparison to artificial feeding. The infant's emotional needs are also fulfilled as breast feeding requires physical closeness with the mother while bottle feeding requires neither closeness nor the presence of the mother.

The new mother also benefits from breast feeding. Infant sucking stimulates the pituitary gland to release Oxytocin which stimulates the "let down" reflex and contracts the uterus, thus more quickly diminishing the placental site, minimising blood loss and the potential for infection. Laufer (1990) suggested that mothers who have an unsatisfactory birth experience may lose self esteem. On the other hand, a successful breast feeding experience can help to rebuild self confidence and self esteem. Research has indicated that many women who wish to breast feed but, for a variety of reasons are unsuccessful, frequently feel upset, disappointed, guilty and frustrated (Fahy and Holschier, 1988). Furthermore, Beck (1989) and Virden (1988) found that breast feeding mothers were better adjusted to the maternal role and the mother-infant bond was enhanced. According to Yeung

(1983, p.63) the closeness of breast feeding exposes the dyad to a wide range of bodily stimuli that enriches maternal/infant interaction.

Historically, social and other demographic variables have influenced the continuity of breast feeding (Bailey and Sherriff, 1992; Fahy and Holschier, 1988). Attention to variables such as age, education and income may be an important factor for consideration in the development of midwifery interventions for the education of new mothers.

Ellis (1983, p. 39) described breast feeding as "an art, a skill which must be learnt". Midwives in their supporting, teaching role assist the mother and infant to develop these skills.

Teaching begins as soon as possible after the birth of the baby. This may be inappropriate as it is suggested by Bottorff (1990) and Evans (1991) that the mother may not be ready at this time for the transition to her new breast feeding/maternal role. Perhaps this is to be expected, for although giving birth is perceived as a normal physiological function and the postpartum woman is generally considered to be in a satisfactory condition requiring little attention, "nothing could be further from the truth" (McKenzie, Canaday and Carroll 1982, p. 23). The birth process together with the first week of life is recognised as a critical time for both baby and mother (James et al., 1987). The postpartum woman experiences many physiological and psychological changes which, although "normal", are potentially

hazardous. McKenzie et al. (1982, p. 29) state that "a nonpregnant patient who manifested these physiological changes would immediately be a candidate for intensive care". The majority of changes occur from the birth of the baby until 10 days postpartum with the most critical periods being the first 24 hours and 10 days post partum. Included in these physiological and psychological changes are breast feeding and establishing lactation. As some of the immediate postnatal period is concerned with recovering from the physical trauma of giving birth the mother may not be ready to learn to care for her new baby until after discharge (Evans, 1991).

The problem

A possible influencing factor in establishment and continuity of breast feeding is lack of emotional and psychological support (Jones et al., 1986). This need for support is recognised by the Health Act, 1982 (Health Department of W.A.) which states that the patient and infant should be visited at least daily up to the tenth day after the birth of the child. However, the average length of hospital stay has been steadily decreasing over the last 10 years and in fact, in 1989 in Western Australia, was reduced to approximately 5.5 days (Waddell, Croot, Serafino, Gee and Rouse, 1990). At this time there was no midwifery domiciliary follow up after discharge and this shorter hospital stay decreased the time available for midwives to provide support, education and

information for the family regarding breast feeding and infant and self care.

To further decrease the average length of postnatal hospital stay, some hospitals have established maternity planned early discharge programs with domiciliary midwifery follow up. While these programs decrease hospital costs they also provide the bonus of domiciliary midwifery visits for 7 to 10 days post partum, thus ensuring care, education and support is available after discharge.

Current midwifery postnatal care at most hospitals in Western Australia consists of two main types. Mothers can choose planned early discharge and be followed up at home for 7 to 10 days or they may remain in hospital for an average of 5.5 days and be discharged with no midwifery follow up. The question to be considered is whether there is sufficient time during this short hospital stay for midwives to adequately inform and educate the new mother, or whether the extended exposure to midwifery care during the domiciliary follow up period provides sufficient additional support to effect the establishment, continuity and knowledge of breast feeding.

Purpose

The purpose of this study is to compare the effects of conventional discharge, a special teaching intervention and

planned early discharge on the continuity and knowledge of first time breast feeding mothers.

Questions for study.

1. At 6 weeks postpartum, is there a difference between the successful breast feeding rate of mothers who have either experienced conventional hospital discharge, received a teaching intervention at 3 days postpartum or participated in a planned early discharge program?
2. At 6 weeks postpartum, is there a difference between the breast feeding knowledge of mothers who have either experienced conventional hospital discharge, received a teaching intervention at 3 days postpartum or participated in a planned early discharge program?
3. Is there a relationship between the demographic variables of age, race, marital status, level of education, level of income, type of delivery and home support on the continuity and knowledge of breast feeding at 6 weeks postpartum?

Finally, since early discharge has become an integral part of maternity care, it begs the following question.

4. To what extent does the planned early discharge program meet the needs of the first time mother?

Figure 1 gives a diagrammatical concept of the format of this study.

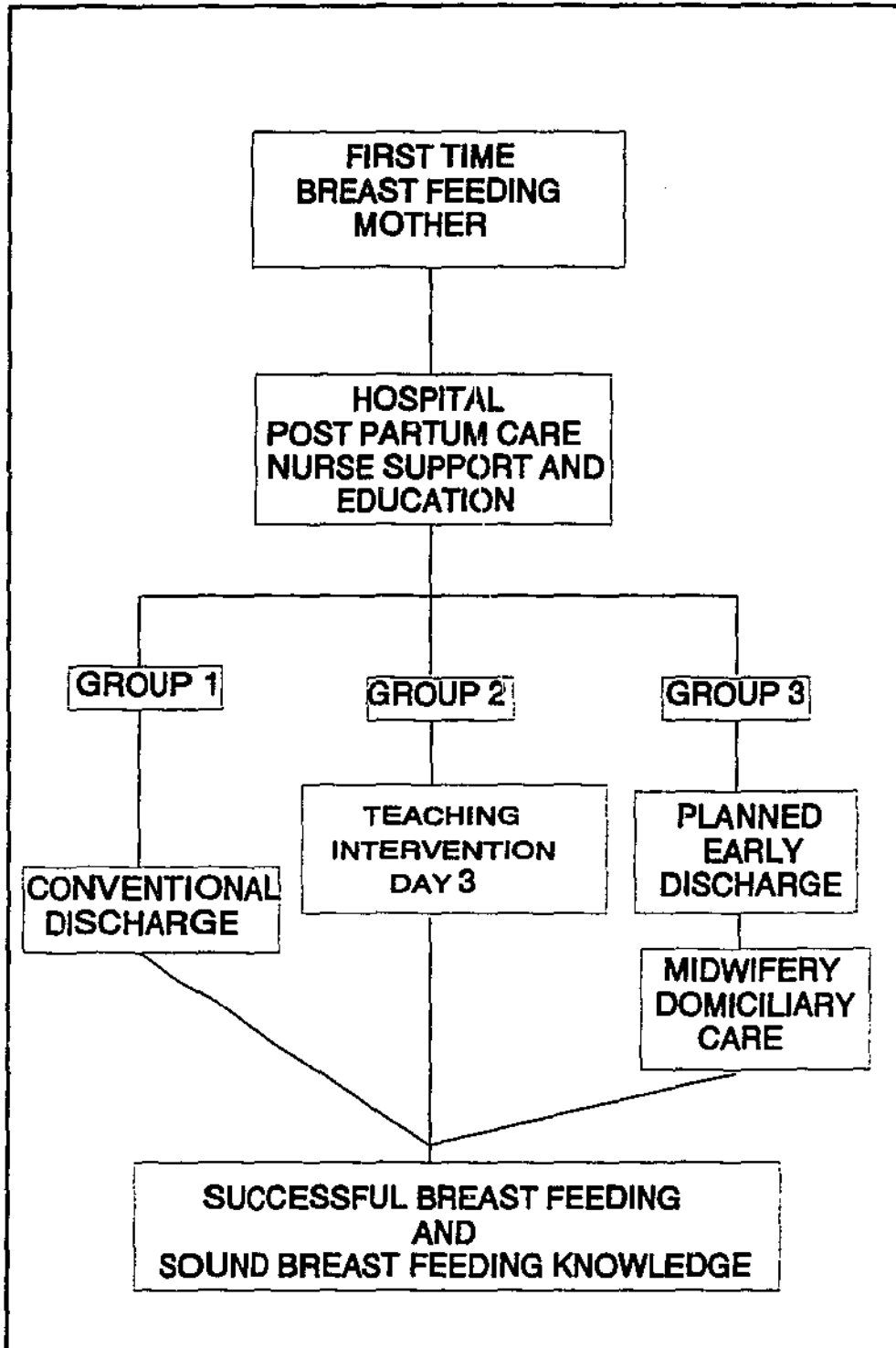


Figure 1. Diagrammatical format for research.

Significance of study

It has become practice at some public maternity hospitals in Western Australia to discharge all women who have had a vaginal birth on or before day three post partum. A domiciliary midwife visits these women for up to 10 days post partum. At other hospitals women are given a choice of being discharged early with midwifery follow up for 10 days or remaining in hospital for a longer period.

Although mothers are exposed to education in hospital, this is generally given before the 3rd day postpartum when, according to some researchers, the new mother is not ready to learn (Martell, Imle, Horwitz and Wheeler, 1989; McKenzie et al., 1982). According to Gay, Edgil and Douglas (1988), Rubin made this observation in the 1960's calling the first few days postpartum the "taking in phase". Although Gay et al. (1988) considered that some of Rubin's observations may be obsolete, it appears from recent studies that her concept of the first few days postpartum still applies. This was supported by Bull (1981) and McKenzie et al. (1982) who agreed that the new mother was not ready to learn in the first few days post partum.

Conceivably then, introducing a structured, intensive education program to be delivered on day 3 when the mother has had time to recover from the birth process may be more appropriate. Discharging the new mother and baby home without adequate follow up, access to education and support may be more

costly in the long term if this results in an increase in artificial feeding and a subsequent increase in infant morbidity (Poskitt 1992).

Establishment and continuity of breast feeding is of concern to health professionals. The results of this study should give health professionals a basis on which to model postnatal care, education programs and discharge planning.

Definitions of terms

Conventional discharge - Discharge from hospital at a time mutually agreeable to the mother and her doctor (usually between 3 to 5 days) with no domiciliary follow up. Women in this category will not receive the special teaching intervention.

Teaching intervention - All women in this category will be given the same breast feeding educational session by a midwife research assistant. This will consist of a short teaching session followed by an informal question and answer period. Information given during the session will be reinforced by the distribution of three breast feeding education pamphlets: Let's look at breast feeding (Appendix A); Breast feed and shape up (Appendix B) and Breast feeding. Breast feeding: Positioning baby at the breast (Appendix C). Objectives for this teaching program are located in Appendix D.

Planned early discharge - A self selection program in which the pregnant woman receives an antenatal domiciliary visit from a

midwife, is discharged from hospital on or before 3 days postpartum and receives midwifery domiciliary visits for 7 to 10 days post partum. Women are eligible for this program if they have experienced no complications during pregnancy, the birthing process or the immediate postpartum period. Women in this category will not receive the special teaching intervention.

Successful breast feeding - Total breast feeding with no complementary feeds while baby continues to gain weight at 6 weeks post partum.

Postpartum period - The postpartum period or puerperium is defined as the period from the completion of the third stage of labour to the return to the normal non pregnant physiological state 6 weeks later (Beischer, Mackay and Purcal, 1989, p. 318).

Neonatal period - The neonatal period is defined as the first 28 days of life (Beischer et al., 1989, p. 350).

Support - For the purpose of this study, support denotes the people who assisted with the care of the baby during the first weeks at home. The quality and consistency of this support is not determined.

Summary

Research has suggested that although a high percentage of mothers are breast feeding on discharge from hospital, this number has significantly decreased by the end of the postpartum period (Hewat and Ellis, 1986; Jones et al., 1986). The reasons for this cessation of breast feeding are ill defined but as

suggested by Bottorff (1990) and Evans (1991) new mothers may not be ready to learn new skills during their short hospital stay. If this is correct it is important for midwives to develop strategies to overcome this problem while supporting and encouraging mothers to establish lactation and continue breast feeding for as long as possible.

In an effort to even further reduce hospitalisation, early discharge programs have evolved which provide the services of a visiting domiciliary midwife for up to 10 days. This strategy increases the time the midwife can spend with a new mother and may be the catalyst for prolonged breast feeding.

Structure of the thesis.

This chapter has discussed the purpose of this research together with the questions for study and operational definitions. The need to develop a strategy to increase the continuity of breast feeding is paramount to the practice of midwifery. This research investigates the results of three midwifery interventions with the view of finding such a strategy.

Chapter two reviews recent literature on breast feeding, timing of education, midwifery care and early post partum discharge. Recent research which is relevant to this study is examined and discussed.

The third chapter examines Orem's self care deficit theory (Orem, 1985) which forms the theoretical framework for this

research. The importance of the supportive-educative role of the midwife in ensuring the new mother is able to adapt to the role of self care and dependent care agent is highlighted.

Chapter four details the methods and procedures used to carry out the research process. The design, setting and subjects are explained and details of the instruments used and the method of data collection are documented. Assumptions which may have affected the study, limitations of the study and ethical considerations are also discussed.

The results of the study are tabled in chapter five both in the text and in graph and table format. From these result, the four research questions are answered.

Discussion of the results of the study is undertaken in chapter six. Some conclusions are drawn and their relevance to the theoretical framework and previous literature is highlighted.

Chapter seven is a summary of the conclusions drawn from the study. From these conclusions, implications for midwifery practice are discussed and recommendations made for further research.

CHAPTER TWO

Literature Review

Matthews (1991) demonstrated that early difficulties with breast feeding create anxieties, undermine self confidence and decrease motivation to continue with breast feeding. This may result in changing from breast feeding to artificial feeding. Several researchers have suggested that as most feeding difficulties occur during the first 2 weeks postpartum there is a need for anticipatory guidance (Lindenberg et al., 1990; Matthews, 1991; McKenzie et al., 1982; Virden, 1988). In the past, when new mothers spent up to two weeks in hospital following delivery, this advice and support came from the hospital midwife. However, the average length of postpartum hospital stay has been steadily decreasing (McIntosh, 1984; Regan, 1984; Rush and Valaitis, 1992; Thurston and Dundas, 1985; Waddell et al., 1990) subsequently decreasing the time midwives have to provide anticipatory guidance. A strategy to ensure that the new mother has access to advice and support is imperative to the successful establishment and continuity of breast feeding. The following literature review discusses the importance of breast feeding, the mother's readiness to learn and the role the midwife plays in education and early postpartum discharge.

Breast feeding

The World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF) recognise the importance of the prevalence and duration of breast feeding as key elements of primary health care and a means of achieving health for all by the year 2000 (World Health Organisation, 1981). To further promote and encourage breast feeding WHO and UNICEF declared August 1st 1992 as the inaugural breast feeding day offering a certificate to 'baby friendly hospitals' who encourage breast feeding (Schiefelbein, 1992). However, although the establishment of lactation and successful breastfeeding is part of the critical postnatal/neonatal period as stated by Beck (1989) "there is a world of difference between breast feeding and successful breast feeding" (p. 412).

Matthews (1991) who surveyed healthy, breast feeding mothers and newborns, found that feeding problems had an effect on the mother's perception of her baby which, in turn, had an adverse effect on breast feeding. On the other hand, Bottorff (1990) postulated that learning to breast feed took time and persistence and was considered by mothers as a way of validating womanliness and motherhood. This view was shared by Laufer (1990) who suggested that failure to breast feed attacked the mother's self confidence causing her to doubt her ability to be a good mother.

In Western Australia in 1985, Hitchcock and Coy (1988) in their study of 911 subjects found that 83.3% of mothers were breast feeding on discharge from hospital. This is comparable to the number of mothers who leave hospital breast feeding in the whole of Australia (Shiefelbein, 1992). However, in the present study, breast feeding must continue after discharge from hospital until 6 weeks postpartum to be considered successful.

Continuity of breast feeding

Hitchcock and Coy (1988) found that although 84.3% of 911 infants born in a variety of centres in Western Australia were breast fed when discharged from hospital, only 66% were still breast feeding at 6 weeks postpartum. Their study also indicated that continuity of breast feeding was directly related to socio-economic status. All women from the higher socio-economic group continued to breast feed at 6 weeks postpartum in comparison to 64.9% of those from the lowest socio-economic group. Percival (1990) also demonstrated that although 99% of subjects intended to breast feed only 86% were actually still breast feeding at 1 week postpartum. The number had further reduced to 69.3% at 7 weeks postpartum. This result was reinforced by Bailey and Sherriff (1992) who studied a small sample of 45 women from a low socio-economic community in a Perth Northern suburb. They found that only 47% of these women were still fully breast feeding at 4 weeks postpartum.

Lack of continuity of breast feeding is not restricted to Western Australia but is reflected in other Australian states. Hitchcock and Coy (1988) found that 80.9% of women in Tasmania left hospital breast feeding with only 69.7% continuing at 6 weeks postpartum. Again, there was a direct relationship between continuity of breast feeding and socio-economic. Although socio-economic status was not taken into consideration, Fahy and Holschier (1988) who conducted a study in Sydney, established that only 57% of 45 first time mothers continued to breast feed at 6 weeks postpartum. Although this study was small the results are consistent with other studies (Bailey and Sherriff, 1992; Hitchcock and Coy, 1988).

This pattern of breast feeding is not restricted to Australia and has been demonstrated in other countries. Virden (1988) surveyed 60 first time mothers in California and found that only 55% were still breast feeding at 1 month postpartum. Unfortunately, the number of mothers breast feeding on discharge from hospital was not recorded so it is not possible to determine the extent of breast feeding decline during this time. However, no significant demographic difference was noted. Again, Beeken and Waterson (1992) who studied a low socio-economic population in the United Kingdom, found that the breast feeding rate was only 39% on discharge from hospital with a further decline to 20% at 6 weeks postpartum.

A number of researchers stressed the importance of providing anticipatory guidance to establish successful breast feeding and to ensure continuity (Bottorff, 1990; Lindenberg et al., 1990; Matthews, 1991; Virden, 1988). Midwives have been educated to provide this support and encouragement. However, since the average length of hospital stay in Western Australia has decreased to approximately 5 days (Waddell et al., 1990), hospital midwives have little time to ensure the new mother has received sufficient education. Furthermore, it is not clear whether the new mother is receptive to education and advice in the early postpartum period when midwifery assistance is available (McKenzie et al., 1982).

Timing of education

New mothers have many concerns regarding self care and care of their new baby. Bull (1981) who was interested in identifying these major concerns questioned 30 first time mothers at 3 days and again at 1 week postpartum. It was found that although concerns relating to physical comfort had decreased, concerns related to emotional self had increased while concerns regarding the infant remained unchanged in intensity and frequency. This suggests that many concerns regarding self care and baby care are still evident at 1 week postpartum. However, Waddell et al., (1990) reported that by 1 week, new mothers have been discharged from hospital. Consequently the midwife is not

available to provide the necessary education and support to ensure the establishment and subsequent continuity of breast feeding. A later study by Bull and Lawrence (1985) indicated that information received in hospital relating to physical care and infant feeding was helpful to new mothers but they expressed a need for more information on self care and baby care after discharge.

McKenzie et al., (1982) suggested that for the first 2 to 3 days postpartum, mothers have a sensory overload which can be prolonged by an involved and difficult labour. This is supported by Martell et al., (1989) who also implied that the attention span of new mothers may be affected by fatigue and sleep deprivation. Both Becker (1980) and Gay et al., (1988) suggested that during these first few days which Rubin called the "taking-in phase", the mother herself needs mothering.

Brouse (1988) used a teaching intervention on the third day postpartum to determine whether 15 first time mothers would display less anxiety at 3 weeks than 16 control mothers. No statistical difference was found between the two groups. In spite of the small sample, these findings appear to concur with those of other researchers that new mothers are less receptive to education within the first 3 days postpartum (Becker, 1980; Bull, 1981; Gay et al., 1989) .

As the average length of hospital stay decreases there is a need for hospitals to review their postnatal teaching programs.

This need was recognised by Martell et al., (1989) who recommended that teaching be done at various times during the postpartum period. Bottorff (1990, p. 203) agreed that "learning to breast feed, like learning anything new, takes time". This validated the suggestion by Bull and Lawrence (1985) that there is a need for continued contact with health professional as teaching and support provided by midwives can facilitate a more satisfying parenting experience.

Midwifery Care

Beeken and Waterson (1992, p. 287) concluded that such a high proportion of mothers formula feeding indicated that "all is not well in hospital management of breast feeding". Although other researchers have not addressed this concept in relationship to poor continuity of breast feeding the possibility is worth consideration.

Lipsett (1984) studied mothers' satisfaction with midwifery care and found that although midwives were most helpful during the hospital stay one of the major problems identified was confusion and anxiety resulting from conflicting advice. This study was substantiated in Western Australia by Percival (1990) who reported that 72% of subjects stated they had been confused by conflicting advice on infant feeding. A possible reason for this conflicting advice was identified by Beeken and Waterson (1992) who found that there was some ambivalence among midwives about

the benefits of breast feeding. In addition to this, Regan (1984) suggested that, as the new mother is cared for by many people in hospital, care can be fragmented. All of these factors may have an adverse affect on the establishment of successful breast feeding.

Conversely, Houston, Hoqiw and McNeilly (1983) found that structured postnatal visiting by one person resulted in 100% breast feeding at 12 weeks postpartum. Research by Lipsett (1984) produced similar findings and suggested that postnatal domiciliary visiting by hospital midwives should be part of normal postpartum care. This view was also supported by Evans (1991) who found that 96% of women who received midwifery domiciliary follow up for 7 to 10 days after discharge found it very helpful. It may, therefore, be suggested that early postpartum discharge programs which provide midwifery domiciliary care should improve the establishment and continuity of successful breast feeding. As Hewat and Ellis (1986, p. 42) found, "Emotional and psychological support were most important for the promotion of continued breast feeding"

Early postpartum discharge

Since the average length of postpartum hospital stay is steadily decreasing (McIntosh, 1984; Regan, 1984; Rush and Valaitis, 1992; Thurston and Dundas, 1985; Waddell et al., 1990) maternal education programs have been a major concern of

hospital midwives. However, early postpartum discharge programs which provide midwifery domiciliary care give the midwife more time to assist and educate the new mother.

The rationale for early discharge programs is varied. Jansson (1985), McIntosh (1984), Rush and Valaitis (1992), and Waldenstrom (1989), suggested that rising health costs and pressure on hospital beds are the catalysts for commencement of these programs. On the other hand, Jansson (1985) and Regan (1984) highlighted consumer choice as the driving factor with early discharge enhancing parent-child bonding and less disruption to the family unit. Exposure to hospital pathogens is also reduced thus decreasing the risk of iatrogenesis (Jansson, 1985).

These rationales were reinforced in a study by Scupholme (1981) who evaluated an early discharge program and found that not only did early discharge provide great satisfaction for clients, but also reduced the cost of perinatal care while improving the quality of care for low risk families. Thurston and Dundas (1985), however, suggested that jaundice and congenital malformations may be missed with early discharge. This concern was not supported by Norr, Nacion and Abramson (1989) who indicated that early discharge with home visiting can identify environmental deficits such as poor hygiene and domestic violence that can threaten the health and safety of the mother and her new

baby. As a result, teaching and problem solving strategies can be implemented.

Several researchers agreed that new mothers were not receptive to education in the first few days after delivery (Bull and Lawrence, 1985; McKenzie et al., 1982; Martell et al., 1989) while others believed that domiciliary visits following early discharge were appreciated by new mothers and were a time for education and information sharing (James et al., 1987; Lemmer, 1986; Regan, 1984; Scupholme, 1981). It follows therefore, that the best time to educate the new mother is at home, following early discharge from hospital. It can then be argued that the establishment and continuity of breast feeding should be positively affected by early discharge with midwifery domiciliary visits. Waldenstrom (1989) included breast feeding rates in an evaluation of an early discharge program and noted that, at 2 months postpartum, 81% of mothers were still breast feeding. However, this was not significantly different from the breast feeding rate of the total population. Other researchers have not investigated the impact of early discharge on the continuity of breast feeding and there appears to be a deficit in this area of research.

Conclusion

The primary concern in midwifery care is the welfare of the new mother and her baby including the establishment of successful breast feeding. The WHO and UNICEF both recognise the prevalence and duration of breast feeding as key elements in health for all. McIntyre (1991) asserted that while some mothers blame themselves for failure to breast feed the fault often lies in misinformation and lack of consistent and appropriate support.

Martell et al. (1989) and McKenzie et al. (1982) agreed that the attention span of the new mother was affected in the first 2 to 3 days postpartum due to physical discomfort, fatigue and a sensory overload. In addition, a teaching intervention by Brouse (1988) at 3 days postpartum resulted in no significant difference in the anxiety level of new mothers at 3 weeks postpartum. It therefore seems apparent that new mothers need to be exposed to education for longer than 3 days postpartum. This is increasingly difficult to accomplish as the average length of hospital stay is steadily decreasing (McIntosh, 1984; Regan, 1984; Rush and Valaitis, 1992; Thurston and Dundas, 1985; Waddell et al., 1990) and, subsequently, exposure to this education.

McIntosh (1984), Regan (1984) and Scupholme (1981) agreed that there was a saving in hospital costs when mothers are discharged early. However, consideration needs to be given to the possibility that this saving may be at a cost to the wellbeing of the new mother and her baby. Lemmer (1986) and Norr et al.

(1989) suggested that postpartum support eased the transition to the parental role while Bull and Lawrence (1985) agreed that continued contact and teaching by midwives could facilitate a more satisfying parenting experience. It could be argued then, that planned early discharge with midwifery domiciliary follow up enhances the continuation of breast feeding.

Summary

This chapter has compared and contrasted some recent studies by researchers and commentators on topics related to this research. Comments have included the benefits of breast feeding but noted the lack of continuity following discharge from hospital.

Some possible reasons for this lack of continuity have been discussed. These include the mother's readiness to learn and the conflicting advice which may be given in hospital where the new mother is cared for by a number of midwives. The present study looked at readiness to learn by using a special teaching intervention at 3 days postpartum to determine any relationship to continuity and knowledge of breast feeding. On the other hand, however, it is suggested that both of these problems may be addressed by the introduction of early postpartum discharge programs where the mother and baby are discharged home under the care of a domiciliary midwife. To examine this concept, the present study looked at the continuity and knowledge of breast

feeding in relationship to a planned early discharge program with domiciliary visiting.

The results of this study are compared with the results of other researchers to determine whether the literature review is relevant to this population.

CHAPTER THREE

Theoretical Framework

Orem's self care deficit theory forms the theoretical framework for this research. The important assumption by Orem (1985, p. 275) that the "time must be right for the patient to learn" is paramount to the questions raised in this study. Orem also sees nursing as a helping service given by nurses who have specialised knowledge and skill to those with a legitimate need (Rosenbaum, 1986). Therefore, readiness to learn together with the teaching skills of a midwife should adequately prepare the new mother for her breast feeding role.

Orem's (1985) conceptual framework recognises that self care requirements and abilities are influenced by developmental stage, family situations, cultural influences and health states (Fawcett, 1988). The establishment of breast feeding and transition to the maternal role during the postpartum period is an important developmental stage. During this time the new mother requires education and assistance to care for her own physical and emotional needs while adapting to the new role of a parent caring for a new baby. It is the role of the midwife to provide support, education and encouragement during this critical period when appropriate care can foster the initiation and continuity of

breast feeding (Ellis, 1983). The key concepts of the new mother's self care demands and her role as a dependent care agent, together with the supportive-educative role of the midwife will be discussed.

Maternal self care

Central to Dorothea Orem's theory is self care. This concept is the belief that the individual acts on his/her own behalf (Orem, 1985). Self care is described as an action system which is performed deliberately. The client takes responsibility for the action and is therefore the actor for self care. Such care is essential for growth, development and survival. To maintain total self care, the individual must be able to perform all self care actions requiring ambulation and movement.

Although McKenzie et al. (1982) claim that a rapid physiological crisis can occur during the postpartum period, childbirth is generally recognised as a normal physiological function and the majority of postpartum women are not regarded as sick. They are therefore theoretically capable of self care. However, Orem (1985) recognised the need for specialised care during this time and classifies the new mother as a client who requires support and education to regain and maintain her own total self care requisites while acting as a dependent care agent for her baby.

Role of dependent care agent

Self care can only be performed by mature and maturing individuals. Therefore, the individual must have had time for interaction and communication to learn about the necessary action for self care. Infants on the other hand, cannot meet the requirements for self care because of their immaturity. They require complete care from others and this care would normally come from the mother who acts as a dependent care agent for her baby.

While acting as a dependent care agent, the new mother needs to be conscious of the eight self care requisites common to all human beings. These are, according to Orem (1985),

1. Maintenance of sufficient intake of air.
2. Maintenance of sufficient intake of water.
3. Maintenance of sufficient intake of food.
4. Provision of care associated with elimination processes
and excrements
5. Maintenance of balance between activity and rest.
6. Maintenance of balance between solitude and social
interactions.
7. Prevention of hazards to human life, human
functioning and human well being.
8. Promotion of human functioning and development
within social groups in accord with human
potential. (p. 90-91)

Establishment and continuity of breast feeding not only ensure maintenance of sufficient water and food and care associated with elimination but also, due to its immunological, anti allergic and anti infective factors (Lindenberg et al. 1990) prevents some hazards of life and promotes human wellbeing. The closeness of breast feeding is also a time for social interaction between the mother and her baby.

Taylor (1989) suggests however, that a dependent care agent would need to be motivated to care for others as well as to care for self. It is quite possible that an individual could be an effective self care agent and an ineffective dependent care agent or vice versa. To this end, the midwife, acting in a supportive-educative role can encourage the new mother to maintain her own total self care requisites while acting as a dependent care agent.

Supportive-educative nursing system

Hartweg (1991 p. 45) describes a nursing system as the "totality of the actions and interactions of nurses and clients and/or family in a nursing situation at a point in time". Orem (1991) describes three types of nursing systems: wholly compensatory, partly compensatory and supportive-educative. To decide which nursing system is applicable it must be determined who can and should perform the self care actions. In the case of the well new mother and baby, since the mother is capable of self care and to act as a dependent care agent for her

new baby, the supportive-educative nursing system is the system of choice.

The goal of any nursing system is to increase the client's capabilities to meet a need or to decrease a demand. The nurse assists the client to meet existing and anticipated demands for self care by providing guidance and support and an environment which promotes development and teaching.

Orem (1985) recognises that nursing activity can occur in the hospital and the client's home. This notion adheres to the principles of this study that nurse/midwife client interaction begins in the hospital and continues throughout delivery, the postpartum period and into the family home with the early discharge program.

It must be noted that the nurse in the supportive-educative system does not take over the care of the client but encourages her to take responsibility for her own self care. Thompson, Oakley, Burke, Jay and Conklin (1989) believe that the discipline of midwifery focuses on the individual and family's needs for physical care, emotional and social support as well as health education. This role may be extended to preventative health care for women. In reality, however, individual health states are the result of environment, socio-economic means and personal health habits. This research examines whether the role of the midwife as a supportive-educative nursing system contributes to the

continuity of breast feeding and, therefore, subsequent better health of the newborn.

Summary

During the postnatal period the well woman should be able to accomplish required self care while acting as a dependent care agent for her infant. However, she may lack the knowledge or skill, or not be psychologically ready to perform these tasks. Orem (1985) suggests that the supportive-educative nursing system would provide appropriate nursing intervention at this time. For example, the midwife may provide information about breast feeding to the new mother and support her psychologically during the early breast feeding experiences. The objective of this study is to evaluate three different supportive-educative nursing interventions by comparing the successful breast feeding rate and testing the mother's breast feeding knowledge at 6 weeks postpartum.

This chapter has identified the theoretical framework which forms the foundation for this study. The new mother is self caring while acting as a dependent care agent for her new baby. To assist the new mother to attain this status, the midwife acts as an agent for support and education. Figure 2 gives a diagrammatical representation of the theory of self care in relationship to this study.

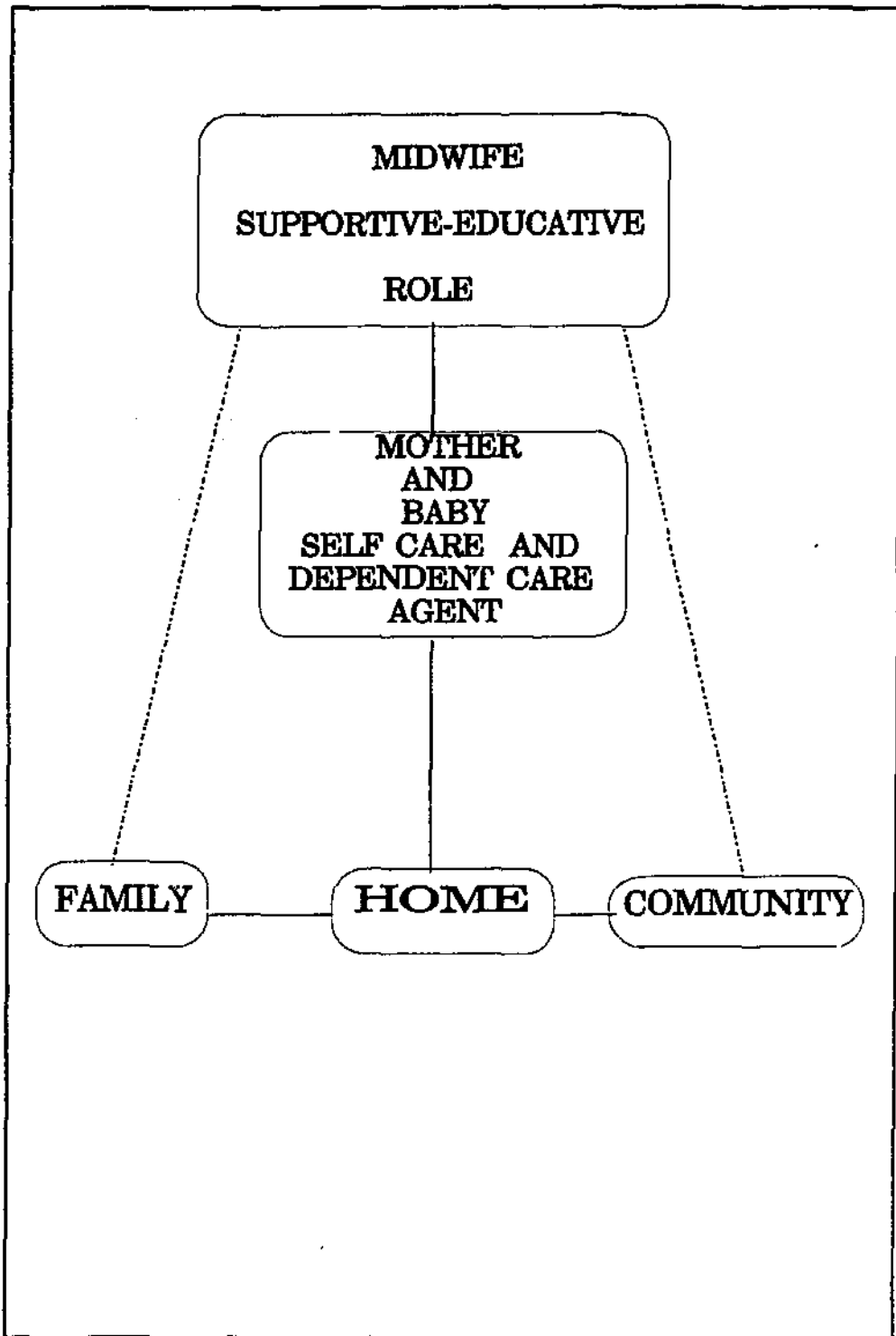


Figure 2. Conceptual framework based on Orem's Self Care Model.

CHAPTER FOUR

Methods and Procedures

Design

This research was conducted in a prospective fashion over a 6 week period using a quasi-experimental post-test-only design. Because subjects could not be randomly assigned to planned early discharge this study incorporated a control group and a teaching intervention group, both of which were randomly assigned, and a self selected planned early discharge group. Each subject was interviewed twice: once during the postnatal hospitalisation and once 6 weeks after delivery.

Midwives working in the postnatal ward were unaware of which mothers were included in the study. To control for bias when administering the second questionnaire at 6 weeks postpartum, the researcher was unaware of which subjects were allocated to groups 1 and 2. All questionnaires were administered by the researcher.

Setting

Subjects for this research were selected from a low risk, suburban hospital in the Metropolitan region of Perth, Western Australia. The maternity unit of this hospital has 36 beds and an

average of 1600 births per year. It has the largest number of births among the non teaching, public maternity units in the state and caters for both public and private low risk clients.

The hospital provides total obstetric care for public clients with an antenatal clinic, antenatal education, delivery and postpartum care and a planned early discharge program. Private clients have access to the hospital facilities but generally prefer to attend their private obstetrician for antenatal care.

The whole unit is staffed by registered midwives and one experienced enrolled nurse. The planned early discharge facility is staffed by experienced midwives who have at least 5 years midwifery experience. The philosophy of the unit supports and encourages breast feeding and the book, "A Breastfeeding Protocol" (1989), developed by the Australian College of Midwives Incorporated, A.C.T. Branch, is the reference used for the standard of breast feeding education.

Subjects

A convenience sample of 194 breast feeding, first time mothers was approached to take part in the study over a period of 12 months. Nine declined to participate. Of these, three clients stated that they intended to move house prior to the questionnaire at 6 weeks and had no telephone number, while the remaining 6 subjects gave no specific reason. The first questionnaire was answered by 185 subjects and 162 of these answered the second

questionnaire at 6 weeks postpartum. The remaining 23 had either moved or the telephone had been disconnected.

Subjects approached	194
Subjects who refused	9
Participants in first questionnaire	185
Unable to be contacted	23
Participants in second questionnaire	162

All of the mothers recruited for the study experienced a complication free pregnancy, labour and immediate postpartum period. The babies were breast fed and declared healthy and fit for discharge by the medical practitioner by 3 days postpartum.

Mothers who had a caesarian section, severe postpartum haemorrhage greater than 1 litre, persistent hypertension or were not fit for discharge on day 3 postpartum were not included in the study. Mothers whose infants were less than 38 weeks gestation, asphyxiated at birth and/or required oxygen therapy for greater than 24 hours, jaundiced requiring phototherapy treatment or were not fit for discharge on day 3 postpartum were also excluded from the study. Since the instruments used were questionnaires which required some command of the English language, women who did not have an understanding of the English language were not considered for the study.

The final 162 subjects who participated in the completed study were comprised of two main self selected groups. One hundred and ten who had chosen conventional discharge and 52

who had elected for planned early discharge. Subjects from the larger conventional discharge group had been randomly allocated to another group to receive the teaching intervention at day 3 postpartum. The study, finally, was comprised of 3 groups:

- Group 1, the conventional discharge group, was composed of 59 subjects.
- Group 2 was composed of 51 subjects who received the special teaching intervention at 3 days postpartum.
- Group 3 was composed of 52 subjects who elected to participate in the planned early discharge program and were discharged from hospital on or before day 3 postpartum.

Inability to contact all of the subjects who participated in the first questionnaire resulted in unequal numbers in the three groups.

Assumptions

1. There was no undetected physiological or psychological disorder affecting either the mother or her baby.
2. The mother answered the researcher's questions honestly.
3. The results were not influenced or biased by the attention of the researcher resulting in the "Hawthorne Effect" (Burns and Grove, 1987, p. 48).
4. The results were not influenced by the fact that the researcher who administered the questionnaires was a staff member at the participating hospital.

5. The subjects were not coerced into breast feeding and chose to breast feed of their own free will.

Instruments

Data for this study were obtained by the use of two questionnaires. The first questionnaire (Appendix E) was completed by the researcher during an interview with the mother either the first or second day after the birth of the baby. This was designed to identify demographic details such as the midwifery intervention which was signified by the type of discharge. Other demographic details collected were age, race, marital status, level of education, level of family income, type of delivery and day of discharge. The demographic questions pertaining to race, marital status, level of education and level of family income were taken from surveys conducted by the Health Department of Western Australia and the Commonwealth Bureau of Statistics. Other details regarding age, type of delivery and day of discharge were collected as the researcher considered these factors may be pertinent to the outcome of the study.

The second questionnaire (Appendix F) which consists of both structured and semi structured questions was completed during a telephone interview 6 weeks after delivery. The first three questions established the continuity of breast feeding. If breast feeding had been abandoned, the reason for ceasing was ascertained. Other questions probed the perceived adequacy of

self care and baby care instruction, what home support was available and the type and number of visits to other health care professionals/allied health personnel. These questions were included as it was anticipated that the answers would help direct future midwifery care by highlighting deficits or excesses in postnatal education programs, and/or support continuation of successful midwifery interventions.

The next five questions were directed only at the participants in the planned early discharge program. Subjects were asked why they chose early discharge, their opinion of the number of postnatal home visits received, the number of different midwives seen altogether on these visits and whether they would choose early discharge again. It was considered that this evaluation of the early discharge program may assist in the development of more appropriate future programs and provide feedback to the midwives regarding their care and plans for future changes.

The final four questions were directed to all participants to determine their knowledge of basic facts about breast feeding. The first knowledge question, "what things would tell you that your baby is getting enough to drink each day?" was included to determine whether the mother was aware of the baby's requirements. Information that six to eight wet nappies per day indicates sufficient fluid intake should be included in any maternal education program. The remaining three questions,

"what do you do if baby appears hungry after a feed?" "how can you increase the supply of breast milk?" and "what to do if the breast milk changes in appearance" were taken directly from the pamphlet "Let's look at breastfeeding" (Appendix A). The answers to these questions were reinforced by the midwife conducting the education session for those mothers in group 2.

Originally the answers to the knowledge questions were to be taken directly from the breast feeding education pamphlets. However, following discussion with clinical midwives in the research hospital and the research assistant, it was agreed to set a criteria for marking, allocating marks for answers which were not totally accurate but reasonable and informed. This criteria for scoring questions 25, 26, 27 and 28 is located in Appendix G. During data analysis these scores were added to obtain a total knowledge score for each subject.

Validity and reliability

Prior to commencement of data collection, the questionnaires were given to five midwives, each with more than 5 years midwifery experience, to review and assess face and content validity. No changes were suggested so a pilot study of 10 mothers was undertaken. Similarly, no problems were encountered with the questionnaires in terms of asking the questions and marking the answers during the pilot study. To

ensure reliability, all questions were asked by the same researcher using a standard format.

Data collection

First time mothers who were eligible for inclusion in the study were approached by the researcher within the first 2 days postpartum. They were informed that the research concerned breast feeding and that the objective of the study was to seek mothers' views regarding their maternity care. They were also asked to make note of any occasion when they thought "I wish they had told me about that in hospital" and pass this information on to the researcher at the 6 week contact. It was pointed out that the results of this research could assist midwives with the direction of future care. Mothers who agreed to participate were then given an information sheet (Appendix H) and verbal consent was requested. Mothers were assured of confidentiality and made aware that, should they consent to participate in the study, they may refuse to answer any question or withdraw from the study at any time without jeopardising their current and future care. It was also emphasised that the decision not to be included in the study did not affect their future care in any way. Participants were advised that the results of the study would be made available to them on request.

All data were collected directly by the researcher. The first questionnaire was completed and the name, together

with the research code number, recorded in a journal which was kept solely in the possession of the researcher. A notation was made in the journal along side the participants of the early discharge program. The name of all mothers who consented to be in the study and were not participants in the early discharge program were given to the research assistant who randomly allocated them to group 1 and group 2. To control for potential bias by the researcher, the research assistant kept this list secure until questionnaire two had been completed. The discharge type was then entered on the data collection sheet prior to analysis.

At 6 weeks postpartum telephone contact was made with the participants. The researcher asked if it was convenient to complete the second questionnaire. If, for some reason, it was not convenient at that time a more suitable time was arranged or the researcher called again until a mutually convenient time had been established. Following the collection of data for the second questionnaire the researcher was able to give advice and answer questions. It was noted that some of the participants welcomed the opportunity to talk about their baby.

Teaching intervention

Prior to the commencement of data collection a midwife who was interested in breast feeding and research was recruited from the maternity unit as a research assistant. In collaboration with

this research assistant objectives for the teaching intervention were compiled (Appendix D).

The subjects allocated to Group 2, the teaching intervention group, were approached by the research assistant on day three postpartum. Over a period of approximately 15 to 20 minutes the research assistant presented the individual education session on breast feeding adhering to the objectives in Appendix D.

Positioning baby at the breast was discussed together with an explanation of fore milk, hind milk and changes in the colour and consistency of the breast milk over time. The importance of demand feeding and sucking time were emphasised and the problems which can occur when baby undergoes a growth spurt were explained. The need for baby to have six to eight wet nappies per day and the unpredictability of bowel actions were also discussed. Breast engorgement and its treatment was another subject included in the education session plus the need for a healthy diet and fluid intake. Although all of these topics were not included in the second questionnaire they were considered to be an important part of breast feeding education. The subject was then given time to ask questions to clarify any points. On completion, each subject was given three pamphlets which reinforced the information given by the researcher. The pamphlets were "Let's look at breast feeding" (Appendix A), "Breastfeed and shape up" (Appendix B) and "Breastfeeding; positioning baby at the breast" (Appendix C).

Data analysis

The computer package Statistical Analysis System (SAS) was used to analyse the data with the alpha level set at .05. Frequencies were calculated for the variables of race, marital status, level of education, family income, type of delivery, method of feeding, support at home and visits at other health professionals. The frequencies, means and standard deviations were calculated for the demographic variables of age, day of discharge and the commencement of artificial feeding. To determine the extent of satisfaction with instruction received in hospital, frequencies for the "yes", "no" answer to these questions were also determined.

To examine whether the method of feeding at 6 weeks postpartum was related to the midwifery interventions Chi square tests were conducted. From this analysis, an answer to the first research question was postulated.

To answer the second research question, analysis of variance (ANOVA) was used to analyse the variable, knowledge of breast feeding, in relation to the three midwifery intervention groups.

Chi square tests were used to examine the relationship between the method of feeding at 6 weeks postpartum and the variables age, race, marital status, level of education, level of income, type of delivery and home support. The relationship between knowledge and age and income was examined using an

analysis of variance. A t-test determined the relationship between education and knowledge while Pearson correlation coefficients investigated any correlation between knowledge, day of discharge and home support. The results of these analyses were used to answer research question number three.

Research question number four asked to what extent the planned early discharge program met the needs of first time mothers. To answer this question, frequencies for satisfaction with the number of home visits, the number of midwives seen at home and the possibility of choosing early discharge again were calculated. Comments to open ended questions which permitted mothers to comment were arranged in common themes and reported. Other anecdotal data related to satisfaction with hospital care and the reason for commencing artificial feeding were also reported.

Limitations of the study

As the majority of women experience few complications during birthing and the postpartum period the results of this study will therefore be representative of the majority of women. However, the results cannot be generalised to include women with postnatal complications and those who had caesarian sections.

Only well, full term babies were included in the study, therefore, the affect of low birthweight, preterm and/or the compromised baby on breast feeding has not been investigated.

Consequently the results of the study only apply to the normal, full term, healthy, uncompromised infant who is declared fit for discharge on day 3 postpartum.

Subjects in the study reflect a variety of educational and economic groups, however, as it was necessary for all subjects to speak English, ethnic groups are poorly represented. Although it may have been possible to enlist the services of an interpreter in hospital to complete the first questionnaire it was not possible to have an interpreter for the second questionnaire completed over the telephone. This has limited application of the results to English speaking mothers.

Antenatal education was not considered for this study. It is recognised that while some mothers may have attended antenatal classes, some may not. Therefore, some women may have been better prepared for the birth of their baby and transition to the maternal role.

The participating hospital conducts antenatal education and approximately 50% of all clients take advantage of this service. Since special refresher classes are conducted for multiparous women it can be assumed that the majority of women attending the full set of antenatal classes are first time mothers. Some mothers may have attended other venues therefore there was no control of the mother's preparation for her new role and her attitude to breast feeding. It was presumed that the majority of mothers had experienced some form of antenatal education.

Breast feeding knowledge prior to the birth of the baby was not determined. It is recognised that knowledge of, and commitment to, breast feeding would not have been consistent among the subjects. However, a pretest was not conducted as, ethically, misinformation and knowledge deficits would need to have been corrected prior to the commencement of the study and this would have biased the result of the midwifery interventions being tested.

It is important to note that this study is only concerned with the continuity of breast feeding at 6 weeks which is the end of the postpartum period. Further study is required to determine the overall average length of continuity of breast feeding.

Ethical considerations

To conduct the study approval was first obtained from the Ethics Committee of Edith Cowan University. Consent was then obtained from the participating hospital and access to the mothers was approved by the obstetrician in charge of the obstetric unit (Appendix I and J).

As subjects in this study had to meet the criteria for the early discharge program, only the well mother with a well baby was approached to participate. The study was completely non invasive and the participants were informed that they were at liberty to refuse to answer questions or withdraw completely from the study without affecting their care.

This study used two self selected discharge groups as it would have been unethical to either compel the mother and baby to leave hospital before they wished to leave or to keep the mother and baby in hospital longer than desired. During their postpartum hospitalisation, all the mothers received education from the midwives regarding self care, baby care and breast feeding. Midwives on the postnatal ward were unaware which mothers had been included in this study therefore, although mothers in Group 2 received extra education from the research assistant, no mother was disadvantaged by the study.

No initial pretest for knowledge was conducted. Had a lack of information or misinformation been detected at a pretest, the researcher would have been ethically bound to provide education and correct the misinformation. This would have affected the result and biased the breast feeding knowledge at 6 weeks postpartum.

Confidentiality was maintained at all times. Each subject was given a research number and no name or other identifying mark appeared on any data collection sheet. The names, telephone numbers and code numbers were kept separate from the data collection sheets and could only be accessed by the researcher and research assistant. This list was destroyed following completion of the study.

CHAPTER FIVE

RESULTS

This study compared the effect of three different midwifery interventions on the continuity and knowledge of breast feeding for first time breast feeding mothers. The results are presented in relation to the research questions. Analysis of the data was conducted using the Statistical Analysis System (SAS). The alpha level was set at .05.

Study sample

The 3 groups for comparison in this study were:

- conventional discharge (n 59)
- teaching intervention (n 51)
- planned early discharge program (n 52).

A total of 185 first time breast feeding mothers were recruited for the study and participated in completing the first questionnaire. Of these, 162 completed the second questionnaire at 6 weeks postpartum and have been included in the analysis of data.

To establish equality of the groups, means of the demographic data were conducted. It was concluded that there were no significant differences between the three groups.

The age of the subjects ranged from 17 to 37 years with a mean age of 25.49 ($SD = 4.39$). Of the 162 subjects in the study 154 were Caucasian. The remaining 8 subjects were Asian or other descent. The majority of subjects ($n = 129$) were either married or living in a defacto relationship, 32 were single mothers while 1 subject was separated and living independently.

The majority of subjects had attended high school whereas others had gone on to further education. These details are shown in Table 1.

Table 1

Level of Education (N = 162)

	<u>n</u>	<u>%</u>
High school or equivalent	100	61.7
Trade certificate	24	14.8
Diploma and above	38	23.5

A large percentage of subjects (43.2%) received a family income of \$20,000 per year or less. Table 2 details the level of income.

Table 2
Level of Family Income (N = 162)

Income	<u>n</u>	%
Not stated	1	0.6
Less than \$12,000/year	30	18.5
\$12,001 - \$20,000/year	39	24.1
\$20,001 - \$30,000/year	58	35.8
\$30,001 - \$40,000/year	25	15.4
\$40,001 or more per year	9	5.6

The majority of mothers (n = 111 = 68.52%) experienced a normal vaginal birth while the remainder were delivered by vacuum extraction.

As the criteria for the planned early discharge program includes hospital discharge on or before day 3 postpartum, as expected, 37.07% of the subjects were discharged during this

time. Frequencies showed the day of discharge ranged from 1 to 8 days with a mean of 4.191 (SD 1.45).

Feeding method.

At 6 weeks postpartum, each subject was contacted to complete the second questionnaire. At this time 63% were still fully breast feeding. The method of infant feeding is displayed in Table 3.

Table 3

Feeding Method at 6 Weeks Postpartum (N = 162)

Type of feeding	<u>n</u>	<u>%</u>
Fully breast feeding	102	63.0
Breast feed plus bottle	19	11.7
Artificial feeding	41	25.3

Research question 1

At 6 weeks postpartum, is there a difference between the successful breast feeding rate of mothers who have either experienced conventional hospital discharge, received a teaching intervention at 3 days postpartum or participated in a planned early discharge program?

To answer this question a chi square test was used to examine the frequencies for the type of discharge and the method of infant feeding at 6 weeks postpartum. No significant difference was found, $X^2 (4, N = 162) = 4.374, p = >05$. Therefore, it was concluded that there was no difference between the successful breast feeding rate of mothers in the three groups although more women in the early discharge group were still breast feeding. Table 4 details the number of mothers still breast feeding in the three groups.

Table 4

Mothers Breast Feeding in Each Group at 6 Weeks Postpartum

($n = 102$)

Group	n	%
1. Conventional discharge	35	59.32
2. Teaching intervention	32	62.75
3. Early discharge	35	67.31

When artificial feeding commenced.

Mothers who were not successfully breast feeding at 6 weeks postpartum had commenced artificially feeding within the first week following the birth to just prior to the second questionnaire at 6 weeks postpartum. The mean time to commence artificial feeding was 1.148 weeks (SD = 1.755). Table 5 displays the commencement of artificial feeding in weeks.

Table 5

Time Artificial Feeding Commenced (n = 60)

Weeks	<u>n</u>	%
1	11	18.33
2	12	20.00
3	10	16.66
4	15	25.00
5	10	16.66
6	2	3.33

Reason for cessation of breast feeding.

Of the 60 subjects who were either totally artificial feeding or complementary bottle feeding at 6 weeks postpartum by far the commonest reason for not breast feeding was insufficient milk or insufficient/incorrect nutrition in the milk ($n = 37$). Two of these subjects stated that the "baby was colicky because the milk was too fat" and another said "doctor told me that the sodium content in the milk was too high".

These reasons are listed in Table 6.

Table 6

Reason for Cessation of Breast Feeding ($n = 60$)

Reason to discontinue breast feeding	<u>n</u>
Insufficient milk/incorrect nutrition	37
Sore nipples	10
Mother too ill to breast feed	7
Baby too ill to breast feed	4
Mother went back to work	2

Summary for question 1.

It can be concluded that although there were a greater number of mothers from the planned early discharge group still

breast feeding there was no significant relationship between the breast feeding rate of first time mothers at 6 week postpartum and the three midwifery interventions.

Breast feeding knowledge

To ascertain breast feeding knowledge, four questions concerning breast feeding were asked of all subjects at 6 weeks postpartum regardless of their current infant feeding method. The answers were rated with a maximum score of 7 for answering all four questions correctly.

Those who were successfully breast feeding at 6 weeks postpartum scored higher in the knowledge questions. An analysis of variance indicated that this was highly significant, $F(2, 162) = 20.89, p = <.01$. Table 7 details the scores obtained in relation to the three methods of infant feeding.

Table 7

Knowledge Scores at 6 Weeks Postpartum

Feeding method	<u>n</u>	min	max	mean	<u>SD</u>
Breast feed	102	1	7	4.71	1.67
Breast and bottle	19	1	6	3.05	1.39
Bottle feed	41	0	7	2.90	1.81

Research question 2.

At 6 weeks postpartum is there a difference between the breast feeding knowledge of mothers who have either experience conventional hospital discharge, received a teaching intervention at 3 days postpartum or participated in a planned early discharge program?

To answer this question an analysis of variance was conducted which detected a significant difference between the knowledge of the three groups, $F(2, 162) = 3.70$. $p = <.05$. Scheffe's tests revealed the difference was between the conventional discharge group and the planned early discharge program group. No significant difference was noted between the teaching intervention group and the conventional discharge group or the teaching intervention group and the planned early discharge program group. Knowledge scores for the three discharge groups are tabulated in Table 8.

Table 8

Knowledge Scores by Group at 6 Weeks Postpartum

Discharge	minimum score	maximum score	mean score	SD
Conventional	0	7	3.55	1.89
Teaching intervention	0	7	4.21	1.78
Planned early discharge program	1	7	4.48	1.86

Summary for question 2.

It can be concluded that as the subjects from the planned early discharge group displayed a significant increase in breast feeding knowledge there is a significant difference between the breast feeding knowledge of the three groups at 6 weeks postpartum.

Research question 3

Is there a relationship between the demographic variables of age, race, marital status, level of education, level of income, type of birth and home support on the continuity and knowledge of breast feeding? To answer this question these variables were considered individually.

Age.

A chi square test was used to examine the relationship between age and infant feeding. As the ages were so varied, 83% of the cells had expected counts less than 5 therefore the chi square may not have been a valid test. To overcome this, the data for age were collapsed into two groups: 25 years of age and under and 26 years of age and over. It was subsequently shown that age was related to infant feeding, $X^2 (2, N = 162) = 17.99, p = <.01$. In effect, those subjects 26 years of age or over had a greater incidence of breast feeding.

Analysis of variance was conducted to determine whether there was a relationship between age and knowledge. Once again, a significant relationship was detected, $F(1, 162) = 4.30$, $p = <.05$. A Scheffe test revealed that those subjects 26 years of age and over had a greater breast feeding knowledge than the younger group.

Race.

Of the 162 subjects in the study the majority, $n = 154$ were caucasian. Analysis for a relationship to breast feeding and breast feeding knowledge was not conducted for this variable as only eight subjects were not caucasian.

Marital status.

A chi square test was used to examine the possible relationship of marital status to the method of feeding. No significant difference was found, $X^2 (2, N=162) = 4.357$, $p =>.05$.

Level of education.

A chi square test was used to examine the relationship between level of education and continuity of breast feeding. There were insufficient frequencies in each category for analysis so the trade certificate and diploma group were united to give only two groups. No significant difference was detected between those subjects who had attended high school or equivalent and those

subjects who had participated in further education, $X^2 (2, N = 162) = 1.56, p >.05$.

A t-test was conducted to detect any relationship between breast feeding knowledge and education. A significant relationship was detected with subjects in the higher educated group displaying an increased knowledge of breast feeding, $t(61.99) = 1.56, p <.05$.

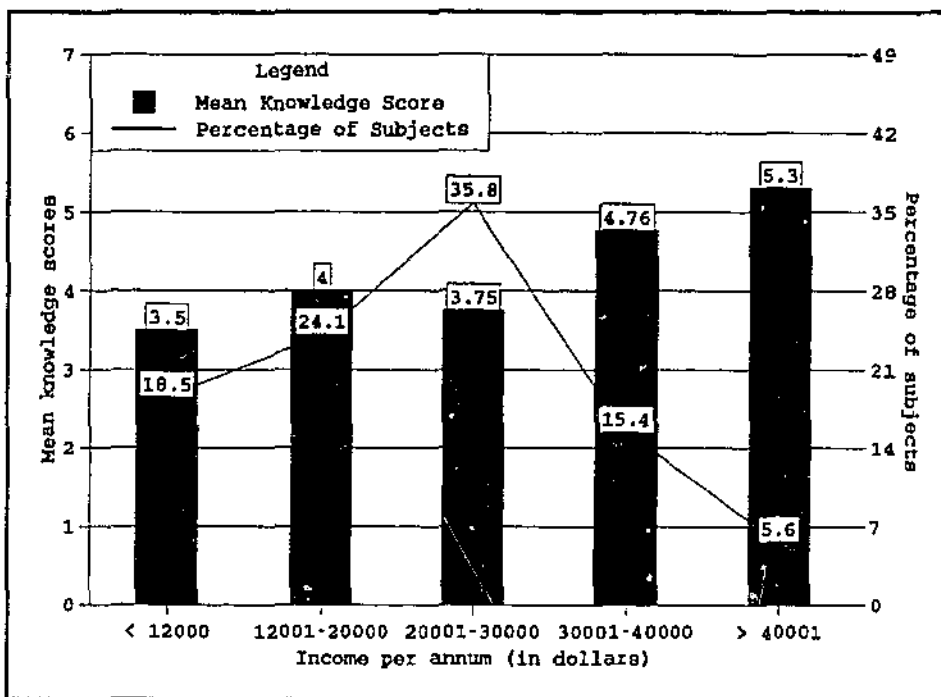
Level of family income.

The data for income were collapsed to three categories: \$20,000 or less per year, \$20,001 to \$30,000 per year and \$30,000 or more per year. A chi square test was then conducted to determine whether the level of income was related to the continuity of breast feeding. The result was found to be significant, $X^2 (4, N = 162) = 16.84, p <.01$. The greater the income the greater the positive relationship was to continuity of breast feeding.

As expected there was also a positive relationship between breast feeding knowledge and the three levels of income. This was determined by an analysis of variance, $F(2, 31.10) = 4.61$, $p < .05$. Details are displayed in Figure 3.

Figure 3.

Knowledge Scores Related to Annual Income.



Type of birth.

A chi square test was used to examine the relationship between the normal vaginal birth, forceps and vacuum extraction and the type of feeding at 6 weeks postpartum. No significant relationship was recorded, $X^2 (2, N=162) = 1.12$, $p = .05$.

Day of hospital discharge.

There was no significant correlation between the variables of knowledge and day of discharge using Pearson Correlation Coefficients, $r = -.02$, $p = >.05$.

Home support.

To determine whether there was any relationship between home support and the continuity of breast feeding, subjects were asked who supported them in their first weeks at home (Table 9). It must be noted that some subjects identified more than one support person.

Table 9

Home Support in the First Weeks at Home

Support person	<u>n</u>	%
Husband/defacto	119	73.5
Mother	75	46.3
Sister	21	13.0
Friend	12	7.4

For the purposes of analysis the data were collapsed into two groups, husband/defacto and others. A chi square test

indicated there was no relationship between the method of feeding and type support person, $X^2(2, N = 162) = .578 = p > .05$.

Similarly, using all the data for type of support no significant correlation between breast feeding knowledge and support was found by Pearson Correlation Coefficients, $r = -.08$, $p > .05$.

Summary for question 3.

It can be concluded that first time mothers older than 25 years of age with an income of greater than \$20,000 per year are more likely to have an increased knowledge of breast feeding and continue to breast feed until 6 weeks postpartum. Education was not significantly related to the continuity of breast feeding although those mothers who have continued with some form of education after high school did have an increased breast feeding knowledge at 6 weeks postpartum.

Conversely, the variables of race, marital status, type of delivery and home support, as demonstrated in this study, bore no relationship to the continuity and knowledge of first time breast feeding mothers at 6 weeks postpartum.

Hospital instruction

To establish the degree of instruction given in hospital postpartum in preparation for discharge, each subject was asked two questions.

1. Do you feel you received adequate instruction regarding your health care?
2. Did you receive adequate instruction to care for your baby confidently?

Of the 162 subjects, 146 answered "yes" to both questions while the 16 remaining subjects answered "no" to both questions. The main reason reported by these subjects for dissatisfaction with the service was that more advice should have been given about breast care and sore nipples ($n = 10$). One subject suggested that an information booklet would have been helpful.

Conflicting information given by midwives causing confusion was noted by 2 subjects. On the other hand, 3 subjects suggested that there were not enough midwives and they were too busy while one stated that the midwives were not helpful in their approach to breastfeeding.

"The midwives did not show enough baby care" was asserted by 7 subjects while another two suggested that more baby care information should be included in antenatal classes.

Visit to health professionals/allied health since discharge

To establish whether the mothers had contact with other health professionals who may have influenced the continuity and knowledge of breast feeding, the subjects were asked what health

professional/allied health personnel they had seen during the 6 weeks postpartum. The answers included doctor, child health/clinic nurse, nursing mothers, lactation consultant and other hospitals (Table 10).

Table 10.

Health Professional/Allied Health Consulted in the Postnatal Period (N = 162. Some subjects gave multiple responses)

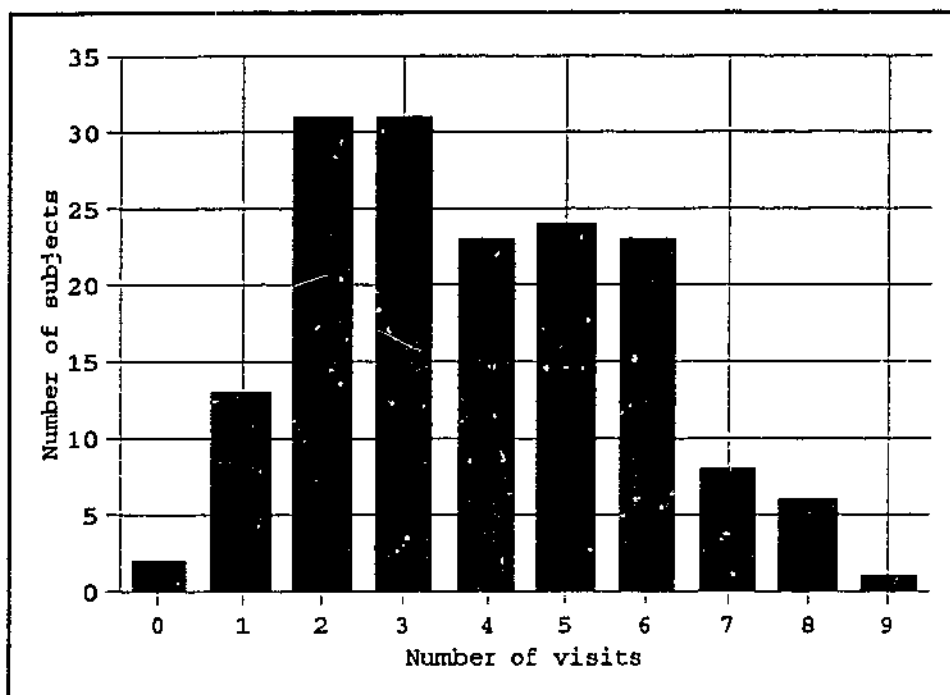
Health professional/ Allied health personnel	<u>n</u>	%
Doctor	65	40.1
Child health	160	98.8
Nursing Mothers	5	3.1
Others	18	1.1

All but two subjects visited the child health/community nurse and many made multiple visits to various practitioners either for themselves or for their baby (Mean = 3.89, SD = 1.94).

These visits did not include the 6 week postnatal medical examination. Details of the number of visits to Health Professionals are displayed in Figure 4.

Figure 4.

Visits To Health Professionals



Research Question 4

To what extent does the planned early discharge program meet the needs of the first time mother?

Reason for participation.

Subjects were asked why they had chosen to participate in the early discharge program. Although a variety of answers were given to this question, by far the most common answer was that they "didn't want to stay in hospital and wanted to get home" ($n = 34$). While 9 subjects thought they would get more sleep at home and another 9 said they felt more confident and relaxed at home, 5 thought they "could get into a routine much quicker at home". Although routine domiciliary visits were part of the early discharge program only 6 subjects stated this was an incentive to joining the program.

A number of subjects gave more than one reason for participating in the program. Other reasons for returning home early were:

- "My husband wanted me home"
- "I don't have to share a bathroom at home"
- "it sounded like a good option"
- "I was talked into it".

All 52 subjects declared that they would participate in early discharge again. However, two qualified this comment by adding

that it would depend on their commitments at the time while another said she would go home even earlier.

High praise for and satisfaction with the program was indicated by 20 subjects. One of the benefits recognised by 3 subjects was the availability of the midwife who was able to answer questions every day either by telephone or by a home visit. The only negative comment was that it was inconvenient not knowing what time the midwife intended to visit ($n = 2$).

Midwife visits.

Subjects were asked if the number of home visits they received were too few, just right or too many. Again all subjects were unanimous in their claim that the number of visits was just right. The majority of subjects were visited by two midwives. The number is detailed in Table 11.

Table 11.

Number of Midwives Seen at Home During Course of Domiciliary Care

Number of midwives	n	%
1	12	23.1
2	26	50.0
3	14	26.9

Summary for question 4.

The majority of subjects praised the planned early discharge program. All subjects agreed that the number of visits received from the midwives was just right, and unanimously declared that they would participate in early discharge again.

Summary

At 6 weeks postpartum, 63% of mothers were still breast feeding their baby. There were a number of reasons given for the commencement of artificial feeding. By far, the most common reason was insufficient milk. Overall, those mothers who were successfully breast feeding displayed a greater knowledge of breast feeding.

Although there was no significant difference between the three groups, more mothers in the planned early discharge group were successfully breast feeding at 6 weeks postpartum. On the other hand, there was a significant difference in knowledge between the three groups with those subjects in the planned early discharge group having greater breast feeding knowledge.

There was a positive relationship between age, continuity of breast feeding and breast feeding knowledge. That is, the incidence of successful breast feeding and breast feeding knowledge increased with age. Similarly, there was a positive relationship between income, continuity of breast feeding and breast feeding knowledge. On the other hand, although there

was no relationship demonstrated between education and continuity of breast feeding, there was a significant relationship between education and breast feeding knowledge. Other variables such as marital status, type of birth, day of discharge and support were not significantly related to either continuity of breast feeding or breast feeding knowledge.

The majority of subjects felt they had received adequate instruction in hospital to care for themselves and their baby. Only 16 reported some dissatisfaction with hospital care.

Although only 20 subjects volunteered praise and satisfaction with the planned early discharge program, all members of this group agreed that they would choose early discharge with domiciliary follow up in the future.

CHAPTER SIX

Discussion

The main purpose of this study was to determine the relationship between three midwifery interventions and the continuity and knowledge of first time breast feeding mothers. Other variables taken into account were age, race, marital status, education, income and type of delivery. Two important midwifery interventions were a teaching program at 3 days postpartum and a planned early discharge program which included domiciliary visits for up to 10 days postpartum. These domiciliary visits increased the mother's exposure to the supportive educative role of the midwife.

The study was conducted with subjects at a non teaching hospital with an annual birth rate of 1600. Very few of the mothers who delivered at this hospital were covered by private insurance. This is not surprising when the demographic information of income was examined as the majority of subjects had a family income less than \$30000 per annum.

The following discussion looks at the findings of this study in relation to the literature and the theoretical framework.

Feeding method and breast feeding knowledge

Only 63% of the mothers in this study were still breast feeding at 6 weeks postpartum. These results are comparable with those of other researchers (Fahy and Holschier, 1988; Hitchcock and Coy, 1988; Percival, 1990; Virden, 1988). They are, however, considerably better than the results of Bailey and Sherriff (1992) who found that only 46.7% of women were still breast feeding at 4 week postpartum, and Beeken and Waterson (1992) whose results indicated that the breast feeding rate had declined to 20% at 6 weeks postpartum.

Predictably the relationship between breast feeding knowledge and successful breast feeding at 6 weeks postpartum was highly significant. This reinforces the idea from Ellis (1983, p. 39) that breast feeding is "an art, a skill which must be learnt". Therefore, since the learning rate of subjects differ, midwives need to examine their practice and develop strategies to determine the right time to teach new mothers the art of breast feeding. It is possible that such strategies could not only benefit the new mother but result in midwifery time being used more effectively.

Difference between midwifery interventions

Breast feeding rate.

Although there was no statistically significant difference between the three groups in relation to breast feeding, it is

interesting to note that a larger number of the early discharge group were still breast feeding at 6 weeks postpartum in comparison to the conventional discharge and the teaching intervention group. Similarly, there were more subjects in the teaching intervention group still breast feeding than in the conventional discharge group. It appears evident, therefore, that some influence had been exerted by the midwifery interventions and perhaps a larger sample would have produced a significant difference. It is also possible that, since the subjects elected to join the planned early discharge program, they may have been more motivated than subjects in the other groups. However, Bailey and Sherrif (1992) found that motivation/commitment to breast feeding had little influence on breast feeding continuity. The effect of the antenatal domiciliary visit for those in the planned early discharge group was not evaluated. This visit may have influenced the result by encouraging a commitment toward discharge planning and arranging social supports approximately 4 weeks prior to the birth of the new baby. On the other hand, Aberman and Kirchhoff (1985) state that the majority of women have made a decision about infant feeding by the end of the third trimester. If this is the case then the antenatal visit may have assisted with preparation for baby care but had little influence on the choice of feeding. Therefore, the influence on the planned early discharge group must have come from postnatal domiciliary visits. This is

supported by Carty and Bradley (1991) who found that more mothers in their early discharge group were breast feeding without supplement at 1 month post partum than mothers who remained in hospital longer.

Breast feeding knowledge.

Despite the absence of a significant difference between the breast feeding rates for the three groups, there were marked significant differences between breast feeding knowledge. Bull and Lawrence (1985) in relation to teaching postpartum mothers state that "knowledge is essential for effective task performance" (p. 316). Therefore, as anticipated, the results of this study indicate that as well as more subjects successfully breast feeding at 6 weeks postpartum, members of the planned early discharge group had a greater breast feeding knowledge. Given the fact that, in the overall study those subjects successfully breast feeding displayed a statistically significant increase in breast feeding knowledge, it must be questioned why the successful breast feeding rate of the planned early discharge group was not significantly different from the other groups. It is possible that another variable, not detected in this study, is responsible.

Since members of the planned early discharge group were encouraged to plan for discharge from the time of booking at the hospital and again given discharge guidance at 36 weeks gestation it is reasonable to assume that they had been motivated to take

responsibility for their own health care and subsequently the health care of the unborn child. During the 36 week antenatal domiciliary visit the early discharge midwife had an opportunity to assess social, financial and other health needs and suggest referral to relevant agencies. Above all, the women were encouraged to undertake lifestyle changes and to attend antenatal education classes and keep medical appointments. On the other hand, Young, McMahon, Bowman and Thompson (1989) found that women with multiple social problems such as single parents with lack of social support are often late antenatal attenders, often isolated socially and psychologically, and reluctant to assume the role of the expectant parent. During the now reduced hospital stay some of these problems may remain undetected and mother and baby discharged to the unimproved environment thus perpetuating the problem. This, in turn, may be the catalyst for poor breast feeding knowledge and inappropriate infant care. If this is the case then it is important to continue and even extend this antenatal contact by early discharge midwives to ensure discharge planning commences early in the pregnancy.

Although there was a slight increase in the number of mothers from the teaching intervention group still breast feeding at 6 weeks postpartum compared with the conventional discharge group, these results confirm the findings of other researchers who suggest that for the first 2 to 3 days postpartum, mothers are unreceptive to education (Brouse, 1988; Martell et al., 1989;

McKenzie et al., 1982). These studies, in turn are a reinforcement of what Rubin described as the "taking in phase" when the new mother herself, needs "mothering". Perhaps a more appropriate time for parent education would be after day 3, described as the "taking hold phase" when new mothers show a desire to take independent action and show more interest in the care of the new baby (Becker, 1980; Gay et al. 1989; Percival, 1990). As stated by Orem (1985, p. 275) "the time must be right for the patient to learn". As less time is being spent in hospital, midwives need to find an appropriate time for parent education.

Taylor (1989) considers that Orem's general theory of nursing can be applied to the care of the family. Since the mother and new baby are returning to the family unit before the educative process has been accomplished, perhaps the midwife should be considering an increasing role caring not only for the new mother and baby, but for the family as a whole. It appears obvious the influencing factors of age and income also impact on the family unit. Taylor (1989, p. 134) states, "When the caregiver is unable or unwilling to provide the necessary care, a need for nursing may exist". This may be interpreted as, when the new mother is unable or unwilling to breast feed her new baby, the midwife, in the supportive-educative role, may intervene to ensure that the mother is able to meet her own self care demands while, at the same time, providing dependant care for her new baby. If this is the case it is important to follow the

new mother into the home environment and assist her to adapt to the new parenting role. Although the Health Act (Health Department of W.A. 1982, p. 18) states that the patient and infant should be visited "at least daily up to the tenth day of confinement" this has not been the case since the average hospital length of stay decreased from 10 days. No adjustment has been made to fulfil the requirements of this Act. Compliance with the Act would afford all new mothers access to midwifery support for the important first 10 days of the postnatal period. This, in effect, may prove cost effective in the long term if, as suggested by Rose (1989), it resulted in a reduction of hospital emergency room visits.

Reason for artificial feeding

Of the mothers who were artificially feeding, 61.66% cited insufficient milk as a major reason for breast feeding failure. This phenomenon has previously been documented by several researchers (Aberman and Kirchhoff, 1985; Bailey and Sherriff, 1992; Hill, 1991; Fahy and Holschier, 1988). On the other hand, Baghurst (1988) stated:

Fewer than 5% of nursing mothers may be physiologically incapable of producing sufficient milk due to inadequate glandular lactation tissue. In addition, the mother's perception of an adequate milk supply may be due to the interpretation of the infant's behaviour as hunger or to the

misinterpretation of the normal physiological changes of the breast as caused by the cessation of milk production. (p. 113).

In spite of this statement, it appears that beliefs about insufficient milk supply are a reality to mothers and do change breast feeding habits.

Hill (1991) who investigated the reason mothers perceived they had insufficient milk for their baby concluded that the main reason was a "fussy baby". Since continued milk production depends on the effective removal of milk from the breasts, as emphasised by Shrago and Bocar (1990), the infant's contribution as related to attachment to the breast and effective sucking is essential to successful breast feeding. In keeping with this, Bailey and Sherriff (1992) identified the need for a support system to accurately interpret and assist with this and any other problems that may arise during the breast feeding period.

As knowledgeable support people are often unavailable to the new mother after discharge from hospital Moore, Bianchi-Gray and Stephens (1991) suggest that a community hospital-based breastfeeding counselling service could be a solution to this problem. Certainly, this concept would increase the supportive-educative role of the midwife while giving 24 hour access to the new mother. Hill (1991) records mothers stating that knowing how to produce more milk would have helped to avoid premature termination of breast feeding. This is reinforced by the fact that

in this study there was a significant relationship between breast feeding knowledge and successful breast feeding.

Demographic characteristics

Age.

The age of the subjects was fairly evenly divided into two groups of 25 years and under (55.2%) and 26 years and over (44.8%). Statistical information from the Health Services Statistics and Epidemiology Branch of the Health Department of Western Australia show that the mean age for first time mothers has not changed significantly over the past 10 years. Table 12 displays this information.

Table 12

Mean Age of First Time Mothers

Year	Western Australia	Research Hospital
1983	24.37	23.56
1988	25.31	24.36
1992	25.73	24.90

It is considered that a greater number of subjects would have permitted a more in depth analysis of this variable. Even so, age was found to be a significant factor in the continuity and knowledge of breast feeding. Mothers who were 26 years of age and over were more successful breast feeders than those of the lower age group. This trend has been well documented (Janke, 1988). Yoos (1985) found that conflict with body image and ambivalence about breasts as sexual objects may be a barrier to the younger woman breast feeding. This, in turn, highlights the importance of collaboration between midwives and schools to introduce the importance of breast feeding into the school curriculum.

Orem (1985) notes the need for support during developmental stages which include the forming or changing of attitudes and values and the adjustment of self-concept as well as physical development. Orem (1985) further notes that both chronological and developmental age are important factors in every nursing situation and have meaning in relationship to self care and dependant care. The midwife, acting in the supportive-educative role, should be aware of the needs of the younger mother and assist her to consolidate her sexual identity and role.

Race.

Since 154 of the 162 subjects were caucasian and English speaking it can be concluded that the results of the study were

not influenced by cultural differences. This in turn, must be taken into consideration when applying the research to the population as a whole.

Level of education

Although the criteria for level of education were taken from the Health Department of Western Australia, Patient Satisfaction Survey, 1991, it was not sensitive enough for this study. More relevant results may have been obtained if this component had been broken down into completed school years.

While education as defined in this study was not related to the rate of successful breast feeding, it was significantly related to breast feeding knowledge. Since subjects in the higher education group had participated in education programs after leaving high school, this could be associated with motivation to learn and the adult learning process.

Income

Since only 21% of the subjects received more than \$30,000 family income per year and, in fact, 43.2% received less than \$20,000 annually, it can be concluded that the results of this study generally apply to low income first time mothers.

It has been documented that the incidence of continuity of breast feeding is increased in the higher socioeconomic ranks (Aberman and Kirchhoff, 1985; Bailey and Sherriff, 1992;

Hitchcock, 1989; Jones et al., 1986; Lowe, 1993). However, to create a socioeconomic index it is necessary to know the subject's occupation. As these data were not collected for this study the results can only refer to the economic status of the subjects. Even so, economic status did reflect a positive relationship to the continuity of breast feeding and breast feeding knowledge.

It is evident that mothers from lower income families have a decreased rate of continuity of breast feeding, yet breast feeding is cheaper than buying formula (Poskitt, 1992). Why then do more mothers from higher economic groups persist with breast feeding while those with a lower income change to artificial feeding? Lowe (1993) suggests that this may be in response to health education and the tendency for mothers with higher socioeconomic status to conform to the recommended infant feeding method. Health education, in effect, may be the key to this deficit.

As indicated by this study, family income has a relationship to breast feeding knowledge. Orem (1985, p. 220) recognises this and suggests that nurses should investigate the "social and economic conditions prevailing in the general area of residence". She goes on to suggest that individuals' living conditions are relevant to self care and dependant self care. Since living conditions are generally associated with the level of family income, it seems reasonable to suggest that the midwife needs to place

more emphasis on the supportive-educative role for mothers from low income families.

Support

This study did not find any relationship between successful breast feeding or breast feeding knowledge and home support. It is possible that the instrument was not sensitive enough to isolate this variable for analysis and such a diverse issue could be addressed in a another study.

Hospital instruction

While only a small minority of mothers were dissatisfied with the assistance and instruction given in hospital by the midwives this result should not be ignored. The majority of these subjects (62.5%) stated that more advice should have been given about breast and nipple care. One subject went so far as to suggest that an information booklet would have been helpful. Since appropriate pamphlets are readily available and, in fact, were distributed to all mothers in the teaching intervention group it is disappointing to note that they are not being used advantageously by all midwives. This may be an indication of some ambivalence about breast feeding among midwives as noted by Beeken and Waterson (1992). It may also be a predisposing factor to the failure to breast feed and reflects on the supportive-educative role of the midwife.

Surprisingly, only 12.5% of subjects identified conflicting information from midwives in hospital causing confusion. This is in marked contrast to a Western Australian study by Percival (1990) who found that 72% of new mothers commented on conflicting advice from hospital midwives. It must be noted, however, that Percival (1990) looked at subjects from 12 metropolitan hospitals while this study represented only one metropolitan hospital. The problem has also been identified by Lipsett (1984) and Beeken and Waterson (1992). The reason for the low figures in this study may be due to the fact that the researcher is a hospital midwife and there may have been some reluctance on the part of the subjects to complain about their hospital care. It could also be due to an improvement in continuity of hospital care. Percival (1990) also indicated that mothers wanted more time with the midwife and found it difficult to build up a relationship with anyone in hospital because of constantly changing staff. It is anticipated, however, that the continuity of midwives associated with domiciliary visits for early discharge clients can overcome this problem.

Visits to other health professionals

It is reassuring to note that all but 2 subjects visited the community child health nurse at least once during the 6 week period. This reinforces the assertion by Percival (1990 p. 396) that "in general, women wanted more time with midwives and child

health nurses to ensure they received sufficient information and help with infant care, infant feeding and their own care following the birth". The fact that there was an average of approximately four visits to health professionals for each of these subject indicates that there is a need for support in the community. Hospital domiciliary midwives taking care of the new mother and baby during the critical first 10 days postpartum, working in collaboration with the community child health nurses represents a strong basis for midwives in a supportive-educative role.

Early discharge program

Since participation in the planned early discharge program was voluntary it can be concluded that consumer choice is the impetus for early discharge in this instance. The reasons given for wanting to return home early are in accord with the findings of Jansson (1985) and Regan (1984) who highlighted enhancement of parent-child bonding and return to the family unit. Perhaps this need to return to the family indicates a preparedness to return to the role of self care and commence the maternal role of the dependant care agent.

The role of the supportive-educative domiciliary midwife was recognised by the subjects in this group who were unanimously satisfied with the number of domiciliary visits received. This supports the findings of other researchers who agree that domiciliary visits are appreciated by new mothers and

are a time for education and information sharing (James et al., 1987; Lemmer, 1986; Regan, 1984; Sculpholme, 1981).

Although all 52 subjects in this study declared they would participate in early discharge again, two added that it would depend on their commitments and supports at the time. It is reasonable to assume that the birth of another child would increase their responsibility as a dependant care agent. As a result, the family dynamics would be changed and although some mothers may be anxious to return home to the family others may wish to remain in hospital and relinquish some of the dependant care agency to the midwives.

The subject's overwhelming satisfaction with the early discharge program concurs with the study by Carty and Bradley (1991) who, using a 22 item questionnaire, found that new mothers who participated in early discharge before 3 days post partum were significantly more satisfied with their care than those mothers discharged later. However, since this study was confined to first time mothers these results cannot be generalised.

CHAPTER SEVEN

Conclusion

A number of conclusions can be drawn from the study along with the implications for midwifery practice and further research.

The major findings of this study indicated that age and income were positively related to successful breast feeding. As would be expected, age and income are also positively related to breast feeding knowledge. However, education and planned early discharge with midwifery follow up also reflect an increase in breast feeding knowledge. Why this increased knowledge was not reflected in an increase in successful breast feeding rate of these subjects is undetermined but it is theorised that the sample was not large enough or the instrument not sensitive enough to measure these variables adequately.

Breast milk contains nutrients, enzymes and hormones not present in formulae. As a result, breast fed infants have a lower risk of gastrointestinal and respiratory infections than formula fed infants. Breast feeding is also a cheaper way of feeding infants than formula (Poskitt, 1992). Despite these facts, younger women with a low income are more likely to formula feed than older women with a higher income. Since breast feeding knowledge is also lower in the younger and low income groups strategies need to be developed to remedy this situation.

McIntyre (1991) postulated that to be successful the mother must believe she can breast feed. Aberman and Kirchhoff (1985) concluded that the decision to breast feed is made by the end of the first trimester therefore breast feeding education should begin early in pregnancy. Such education may enhance the possibility of a positive attitude to breast feeding prior to the birth of the baby. Bailey and Sherriff (1992) agree that the decision to breast feed is made early in pregnancy but commitment to breast feeding has no bearing on the ultimate success and continuity of breast feeding. Again the need for midwives to be available for ongoing support and education is evident.

Bailey and Sherriff (1992) suggest that the maintenance of breast feeding depends on a support system. However, this study did not detect any significant relationship between breast feeding and home support. On the other hand, breast feeding knowledge was significantly increased in the planned early discharge group who had support from the domiciliary midwife. Although most mothers are satisfied with the education provided by hospital midwives as the length of hospital stay decreases, so does the time available for the midwife to teach parenting skills to the new mother. As breast feeding knowledge is higher among the mothers receiving domiciliary midwifery visits it should be considered whether this is a result of prolonged exposure to the supportive-educative role of the midwife or to another variable such as planned discharge which empowers the woman to take

responsibility for her own self care and the dependant care of her new baby.

Mothers in the planned early discharge group were full of praise for this concept and for the domiciliary midwives. This was also noted by Carty and Bradley (1991), Jansson (1985), Regan (1984) and Waldenstom (1989). As discussed in this study, there was a higher percentage of mothers in the planned early discharge group still breast feeding. Although the difference was not statistically significant, perhaps a greater number of subjects would have produced a different result. Nevertheless, the incidence of increased breast feeding knowledge cannot be ignored and gives weight to the argument that mothers should be followed up at home after discharge from hospital to increase their exposure to the supportive-educative role of the midwife.

Implications for midwifery practice

If as stated by Aberman and Kirchhoff (1985) and Bailey and Sherriff (1992), the decision on infant feeding is made early in pregnancy, midwives need to promote midwifery care and breast feeding before conception and then again from the first antenatal contact with the expectant mother. Special attention needs to be given to education programs to ensure that they reach the younger women from low income families. Since it can never be too early to initiate the concept of breast feeding, perhaps the

midwife in the role of educator should be promoting breast feeding in school programs along with self care.

Some high school curricula in Western Australia include an option for early childhood studies which teach adolescents about pregnancy and the care of the newborn. At present midwives from the Australian College of Midwives incorporated (W.A. branch) are involved with these courses and contributing to the education of the next generation of child bearing women. All midwives need to be aware of this important contribution to the future and assist where possible.

It also appears that discharge planning needs to commence as soon as possible in the antenatal period. As early discharge is becoming more prevalent in public hospitals all women who present for antenatal care should be encouraged to plan for their discharge and with the help of the midwife become empowered to undertake their own self care and the dependant care of the new baby. Since the nature of self-care requisites is conditioned by the family (Taylor, 1989) the midwife needs to consider the family unit as the unit of service.

The teaching plan and discharge plans for short stay postpartum women need to be more flexible. As the attention span for these women may be affected by sleep deprivation, sensory overload and fatigue, emphasis needs to be limited to important topics. However, mothers have diverse opinions of what information is most important in the first 2 to 3 days (Martell et al.

1989). A strategy would be to allow a new mother to learn at a self directed pace while in hospital and after discharge be followed up at home by a domiciliary midwife until confident to undertake her own self care and the dependant care of her new baby.

This, in effect, may increase the rate of successful breast feeding and in the long term decrease subsequent infant morbidity. In fact, Rose (1989) evaluated a home care program where midwives provided both pre and postnatal care and found that children of mothers participating in the program had fewer emergency room visits for upper respiratory tract infections and for injuries associated with child abuse than children of non participating mothers.

Since successful breast feeding is related to breast feeding knowledge a community hospital based breast feeding counselling service as suggested by Moore et al. (1991) seems a practical recommendation. This initiative would permit the new mother to seek advice from a familiar source while enabling the hospital to continue to contribute to the education of the new mother within the community.

Recommendations for further research

Since the subject's occupation was not taken into account in this study, the relationship between true socioeconomic status and breast feeding was not determined. Again, the question for education was not refined enough to detect any association with

continuity of breast feeding, however, it did identify a relationship with breast feeding knowledge. It would, therefore, be worth repeating this research to reconsider these variables.

This study found no relationship between successful breast feeding, breast feeding knowledge and home support. However, the support in this study only represented the number of support persons not the quality and commitment of support, therefore, further research with a more sensitive instrument may produce an entirely different result.

Since breast feeding knowledge was higher in the early discharge group, yet no significant difference was detected between the breast feeding rates of the 3 groups, other variables such as antenatal education, discharge planning and personal empowerment may be responsible for this phenomenon. Research including these variables may highlight some hitherto unrecognised relationship to the art of successful breast feeding.

Nutrition is one of the primary concerns for good health. A mother's breast milk is individually tailored to suit the nutritional needs of her new baby. Therefore, new mothers who breast feed give their infant a foundation for good health. In keeping with this concept, any research which can dispel myths or reinforce strategies to encourage continuity of breast feeding must be considered valuable in the concern of health for all.

References

- Aberman, S., and Kirchhoff, K. (1985, September/October).
Infant feeding practices. Mothers' decision making.
Journal of Gynaecological and Neonatal Nursing, 394-397.
- Australian College of Midwives incorporated, A.C.T. Branch
(1989). A breastfeeding protocol (2nd ed.) A.C.T: Catholic
education office printing section.
- Baghurst, K. I. (1988, February 1). Infant feeding - public
health perspectives. The Medical Journal of Australia, 148,
112-113.
- Bailey, V. F., and Sherriff, J. (1992). Reasons for the early
cessation of breast feeding in women from lower socio-
economic groups in Perth, Western Australia. Australian
Journal of Nutrition and Dietetics. 49(2), 40-43.
- Beck, M. (1989, December). Breast-feeding: the midwife's role.
Midwives Chronicle and Nursing Notes, 412-414.
- Becker, C. (1980, December). The post partum period. What is
reality? Canadian Nurse, 24-27.
- Beeken, S., and Waterston, T. (1992). Health service support of
breast feeding - are we practising what we preach? British
Medical Journal, 305(6848), 285-287.

- Beischer, N. A., MacKay, E. V. and Purcal, N. K. (1989). Care of the pregnant woman and her baby (2nd ed.). Sydney: Saunders/Bailliere Tindall.
- Bottorff, J. L. (1990). Persistence in breastfeeding: a phenomenological investigation. Journal of Advanced Nursing, 15, 201-209.
- Brouse, A. J. (1988). Easing the transition to the maternal role. Journal of Advanced Nursing, 13, 167-172.
- Bull, M. (1981, September/October). Change in concerns of first-time mothers after one week at home. Journal of Obstetric, Gynaecological and Neonatal Nursing, 391-394.
- Bull, M., and Lawrence, D. (1985, July/August). Mothers' use of knowledge during the first postpartum weeks. Journal of Obstetric, Gynaecological and Neonatal Nursing, 315-320.
- Burns, N., and Grove, S.K. (1987). The practice of nursing research: conduct, critique and utilization. Philadelphia: W.B. Saunders company
- Carty, E.M., and Bradley, C. F. (1991). A randomized, controlled evaluation of early postpartum hospital discharge. Breastfeeding Review. 2(4), 168-172.
- Ellis, D. J. (1983). Needs of the breastfeeding dyad: how nurses can assist. The Australian Journal of Advanced Nursing, 1(1), 38-43.

- Evans, C. J. (1991). Description of a home follow-up program for childbearing families. Journal of Obstetric, Gynaecologic and Neonatal Nursing, 20(2), 113-118.
- Fahy, K. and Holschier, J. (1988). Success or failure with breastfeeding. The Australian Journal of Advanced Nursing. 5(3), 12-18.
- Fawcett, J. (1988, November/December). Conceptual models and theory development. Journal of Obstetric, Gynaecologic and Neonatal Nursing, 400-403.
- Gay, J., T. Edgil A. E., and Douglas, A. B. (1988, November/December). Reva Rubin revisited. Journal of Gynecological and Neonatal Nursing. 394-399.
- Hartweg, D. L. (1991). Dorothea Orem Self-care Deficit Theory. London: Sage Publications.
- Health Department of Western Australia (1987). Committee to Review the Midwifery Regulations. Perth, Western Australia
- Hewat, R.J. and Ellis, D.J. (1986). Similarities and differences between women who breastfeed for short and long duration. Midwifery, 2, 37-43.
- Hill, P. D. (1991). Some mothers who breast feed perceive their milk as inadequate. Is it? Or, could that "insufficiency" have been avoided if the mother had more help initially with breast feeding? American Journal of Maternal/ Child Nursing, 16, 313-316.

- Hitchcock, N. E., and Coy, J. F. (1988). Infant feeding practices in Western Australia and Tasmania: a joint survey, 1984-1985. The Medical Journal of Australia. 148, 114-117.
- Hitchcock, N.E. (1989). Infant feeding in Australia: An historical perspective. Australian Journal of Nutrition and Dietetics 46(4) 102-108.
- Houston, M., Hoqiw, P. and McNeilly, A. (1983). Breastfeeding. Nursing Mirror, 156(6), 1-8
- James, M. L., Hudson, C. N., Gebski, V. J., Browne, L. H., Andrews, G. R., Crisp, S. E., Palmer, D., and Beresford, J. L. (1987, November 2). An evaluation of planned early postnatal transfer home with nursing support. The Medical Journal of Australia, 147, 434-438.
- Janke, J. R. (1988), Breast feeding duration following caesarian and vaginal births. Journal of Nurse-Midwifery, 33(4), 159-164.
- Jansson, P. (1985). Early post partum discharge. American Journal of Nursing. 85(5), 547-550.
- Jones, D. A., West, R. R., and Newcombe, R. G. (1986). Maternal characteristics associated with the duration of breast-feeding. Midwifery, 2, 141-146
- Laufer, A. B. (1990). Breastfeeding. Toward resolution of the unsatisfying birth experience. Journal of Nurse-Midwifery. 38(1), 42-45.

- Lemmer, C. M. (1986, July/August). Early discharge: outcomes of primiparas and their infants. Journal of Obstetric, Gynaecologic and Neonatal Nursing, 230-236.
- Lindenberg, C. S., Artola, R. C., and Jimenez, V. (1990) The effect of early post-partum mother-infant contact and breast feeding promotion on the incidence and continuation of breast feeding. International Journal of Nursing Studies, 27(3), 179-186.
- Lipsett, R. G. (1984). The midwife - help or hindrance. Journal of Advanced Nursing. 1(3), 7-14.
- Lowe, T. (1993), Regional and socio-economic variations in the duration of breastfeeding in Victoria. Breastfeeding Review 11(7), 312-315.
- Matthews, M. K. (1991). Mothers' satisfaction with their neonates' breastfeeding behaviours. Journal of Obstetric, Gynaecologic, and Neonatal Nursing 20(1), 48-55.
- Martell, L. K., Imle, M., Horwitz, S. and Wheeler, L. (1989). Information priorities of new mothers in short-stay programs. Western Journal of Nursing Research. 11(3), 320-327.
- Moore, E. R., Biachi-Gray, M. and Stephens, L. (1991). A community hospital-based breastfeeding counselling service. Paediatric Nursing. 17 383-389.
- McIntosh, I. D. (1984). Hospital effects of maternity early discharge. Medical Care, 22.(3), 611-619.

- McIntyre, E. (1991, July). Breastfeeding management: helping the mother help herself. Breastfeeding, 129-133.
- McKenzie, C. A., Canaday, M. E., and Carrol E. (1982), Comprehensive care during the post partum period. Nursing Clinics of North America, 17(1), 23-47.
- National Health and Medical Research Council, (1985). Report of the working party on implementation of the WHO international code of marketing of breast milk substitutes. Canberra: Australian Government Publishing Service.
- Norr, K. F., Nacion, K. W., and Abramson, R. (1989 March/April). Early discharge with home follow-up; impact on low-income mothers and infants. Journal of Obstetric, Gynaecologic and Neonatal Nursing, 133-141.
- Orem, D. E. (1985). Nursing: Concepts of Practice (3rd Edition). New York: McGraw-Hill Book Company.
- Orem, D. E. (1991). Nursing: Concepts of Practice (4th Edition). St Louis: Mosby.
- Percival, P. (1990). The relationship between perceived nursing care and maternal adjustment for primiparae during the transition to motherhood. Unpublished doctoral dissertation, Curtin University of Technology, Perth.
- Poskitt, E. (1992, September), The joint breast feeding initiative. Professional Care of Mother and Child, 239.
- Regan, K. (1984, October). Early obstetrical discharge: a program that works. The Canadian Nurse, 32-35.

- Rose, M. A. (1989). Home care nursing practice: the new frontier. Holistic Nursing Practice, 3(2), 1-8.
- Rosenbaum, J. N., (1986). Comparison of two theorists on care: Orem and Leininger. Journal of Advanced Nursing, 11, 409-419.
- Rush, J. P. and Valaitis, R. K. (1992, May). Post partum care: home or hospital? Canadian Nurse 29-31.
- Schiefelbein, J. (1992). Encouraging breastfeeding in baby friendly hospitals. The Australian Nurses Journal, 22(3), 19.
- Scupholme, A. (1981). Postpartum early discharge: An inner city experience. Journal of Nurse-Midwifery, 26(6), 19-22.
- Shrago, L. and Bocar, D. (1990). The infant's contribution to breastfeeding. Journal of Gynecologic and Neonatal Nursing, 19(3), 209-215.
- Taylor, S. G. (1989). An interpretation of family within Orem's general theory of nursing. Nursing Science Quarterly, 2(3), 131-137.
- Thompson, J. E., Oakley, D., Burke, M., Jay, S. and Conklin, M. (1989). Theory building in nurse-midwifery. The care process. Journal of Nurse-Midwifery, 34(3), 120-123.
- Thurston, N. E. and Dundas, J. B. (1985, November/December). Evaluation of an early post partum discharge program. Canadian Journal of Public Health, 76, 384-387.

- Viriden, S. F. (1988). The relationship between infant feeding method and maternal role adjustment. Journal of Nurse - Midwifery, 33(1), 31-35.
- Waddell, V. P., Croot, M., Serafino, S., Gee, V. & Rouse, I. (1990). Evaluation of a pilot study of a maternity early discharge program at four Perth metropolitan hospitals. Perth Western Australia: Health Department of Western Australia.
- Waldenstrom, U. (1989). Early discharge as voluntary and involuntary alternatives to a longer postpartum stay in hospital - effects on mothers' experiences and breast feeding. Midwifery, 5, 189-196.
- World Health Organization. (1981). International Code of Marketing of Breast-milk Substitutes. Geneva: World Health Organization.
- Yeung, D. L. (1983). Infant nutrition : a study of feeding practices and growth from birth to 18 months. Canada: Canadian Public Health Association.
- Yoos, L. (1985, January/February). Developmental issues and the choice of feeding method of adolescent mothers. Journal of Gynaecological and Neonatal Nursing, 68-71.
- Young, C., McMahon, J., Bowman, V. and Thompson, D. (1989). Maternal reasons for delaying prenatal care. Nursing Research. 38(4), 242-243.

APPENDIX C

BREASTFEEDING

POSITIONING BABY AT THE BREAST

1. Find a comfortable feeding position that supports the mother's back
2. Ensure adequate support with pillows to bring the baby up to the breast (i.e. not bending over to bring the breast to the baby).
3. Cradle the baby to the breast with the heel of the hand supporting baby behind the shoulders, fingers supporting the back of the head. Baby's body then curls around mother's body facing mother's breast.

CHEST TO CHEST CHIN TO BREAST

4. The baby may need different support at each breast for successful attachment
5. Mother may need to support her breast underneath with four fingers other hand.
6. Tight swaddling of the baby may interfere with good positioning.

TIPS TO ENCOURAGE BABY TO SEEK THE NIPPLE IF NECESSARY

1. Tickle baby's lip with the nipple.
2. Stroke the baby's cheek towards the lips.
3. Circular stimulation around the lips.
4. Stroke the palm of the baby's hand.

SIGNS OF A BABY WELL ATTACHED AT THE BREAST

- * The baby will have more of the areola from the lower half of the breast in the mouth i.e. more of the upper areola will be visible.
- * Baby's lips will be fluted - more noticeable with the bottom lip. Signs of milk may be visible at the corners of baby's mouth.

N.B. A clicking sound made while suckling usually indicates a poor attachment at the breast. (This is quite a different sound from swallowing).

References: Successful Breastfeeding, Royal College of Midwives 1988 in conjunction with the Nursing Mothers' Association of W.A. 1989.

Seek help from: Parenthood Unit, 16 Rheola Street, West Perth.
Nursing Mothers Association Counsellors.
Local Child Health Nurse.

HEALTH DEPARTMENT OF WESTERN AUSTRALIA

January 1989

APPENDIX D

Objectives for teaching intervention.

At the conclusion of the teaching session and informal question and answer session, the new mother will be able to:

1. Demonstrate correct attachment of baby to the breast.
2. Rationalise the need for baby to have six to eight wet nappies every day.
3. Understand and explain normal bowel habits of the newborn.
4. Demonstrate what to do if baby still appears hungry after a feed.
5. Explain that breast feeding works on a supply and demand system therefore returning baby to the breast frequently will increase the supply of breast milk.
6. Accept the need for increased adequate fluid intake together with a well balanced diet.
7. Demonstrate the management of breast engorgement.
8. Understand that as breast feeding progresses the colour and consistency of breast milk changes to accommodate the needs of the baby.

APPENDIX E

QUESTIONNAIRE 1.

DATE OF DELIVERY..... RESEARCH NUMBER.....

1. DISCHARGE

- 1. Conventional
- 2. Teaching Intervention
- 3. E.D.P.

7. TYPE OF DELIVERY

- 1. Normal
- 2. Vacuum
- 3. Forceps
- 4. Breech

2. MATERNAL AGE

8. DISCHARGE DAY

3. RACE

.....

- 1. Caucasian
- 2. Aboriginal
- 3. Asian
- 4. Other (specify).....

4. MARITAL STATUS

- 1. Single
- 2. Married/defacto
- 3. Separated
- 4. Divorced

5. LEVEL OF EDUCATION

- 1. Primary school or equivalent
- 2. High school or equivalent
- 3. Trade Certificate
- 4. Diploma
- 5. Bachelor degree or higher

6. LEVEL OF INCOME

- | | |
|---------|---------|
| Group 1 | Group 2 |
| Group 3 | Group 4 |

WHICH GROUP WOULD YOU SAY BEST
REPRESENTS YOUR FAMILY INCOME.

1. Less than \$230 per week
or less than \$12000 per year
2. \$230 to \$385 per week
\$12000 to \$20000 per year
3. \$386 to \$577 per week
\$20001 to \$30000 per year
4. \$578 to \$769 per week
\$30001 to \$40000 per year
5. \$770 or more per week
\$40001 or more per year

APPENDIX F.

**QUESTIONNAIRE 2
AT 6 WEEKS POST PARTUM**

RESEARCH NUMBER.....

9. HOW ARE YOU FEEDING YOUR BABY?

1. Fully breast feeding...(go to question 14)
2. Breast feeding plus bottle
3. Bottle feeding

**10. IF BOTTLE FEEDING, WHEN DID YOU CEASE
BREASTFEEDING?**

11. REASON FOR CEASING BREASTFEEDING

**12. DO YOU FEEL YOU RECEIVED ADEQUATE INSTRUCTION
REGARDING YOUR HEALTH CARE (e.g. Breast care,
perineal care, exercises)?**

1. Yes.... go to question 14
2. No.... go to question 13

13. IF NO, PLEASE COMMENT

14. DID YOU RECEIVE ADEQUATE INSTRUCTION TO CARE FOR YOUR BABY CONFIDENTLY?

1. Yes.....go to question 16
2. No.....go to question 15

15. IF NO, PLEASE COMMENT

16. WHO SUPPORTED YOU IN YOUR FIRST WEEKS AT HOME?

1. No one
 2. Husband/defacto
 3. Mother
 4. Sister
 5. Friend
 6. Other (specify)
-

17. WHAT HEALTH PROFESSIONAL/ALLIED HEALTH PERSON HAVE YOU SEEN?

1. Doctor
2. Clinic Sister
3. Nursing Mothers
4. Other (specify).....

18. HOW MANY TIME HAVE YOU SEEN THESE HEALTH PROFESSIONALS/ALLIED HEALTH PERSONS?

IF EARLY DISCHARGE

If not E.D.P. go to question 25.

19. WHY DID YOU CHOOSE EARLY DISCHARGE?

20. WHAT IS YOUR OPINION ABOUT THE NUMBER OF HOME VISITS YOU RECEIVED AFTER DELIVERY?

1. Too few
2. Just right
3. Too many

21. HOW MANY MIDWIVES DID YOU SEE AT HOME?

- 1.
- 2.
- 3.
4. more.

22. WOULD YOU CHOOSE EARLY DISCHARGE AGAIN?

1. Yes.....go to question 24
2. No.....go to question 23

23. IF NO, PLEASE COMMENT

24. ANY OTHER COMMENT?

Thank you for your help so far with this questionnaire. I am interested in the educational content of midwifery practice so I would appreciate it if you would answer a few final questions related to breast feeding.

25. WHAT THINGS WOULD TELL YOU THAT YOUR BABY IS GETTING ENOUGH TO DRINK EACH DAY?

26. IF BABY STILL APPEARED HUNGRY AFTER A FEED, WHAT WOULD YOU DO?

27. HOW WOULD YOU INCREASE YOUR SUPPLY OF BREAST MILK?

28. IF YOUR MILK APPEARED BLuish OR WATERY LOOKING WHAT WOULD YOU DO?

Thank you very much for your participation and I wish you and your family all the best for the future.

APPENDIX G

CRITERIA FOR SCORING QUESTIONS 25, 26, 27 and 28

QUESTION 25. WHAT THING WOULD TELL YOU THAT YOUR BABY IS GETTING ENOUGH TO DRINK EACH DAY?

2. At least six wet nappies in 24 hours / passing plenty of urine.
1. Settles after feeds. / Healthy and gaining weight.
0. None of the above.

QUESTION 26. IF BABY STILL APPEARED HUNGRY AFTER A FEED, WHAT WOULD YOU DO?

1. Return baby to the breast / Feed again.

QUESTION 27. HOW WOULD YOU INCREASE YOUR SUPPLY OF BREAST MILK?

2. Breast feed more frequently.
1. Express after feeding.
0. None of the above.

QUESTION 28. IF YOUR MILK APPEARED BLuish OR WATERY LOOKING WHAT WOULD YOU DO?

2. This is normal.
1. Contact the clinic sister or other sources.
0. None of the above.

APPENDIX H

Athalie Johnston

Phone [REDACTED]

CONGRATULATIONS ON THE BIRTH OF YOUR NEW BABY.

Hello! I am a midwife working in the maternity unit and conducting a study into the different types of discharge being offered to new mothers. Some mothers choose to be discharged within 3 days of the birth of their baby. In this case, their discharge has been planned before birth and they are followed up at home by a midwife from the hospital. Other mothers choose to remain in hospital until they feel ready to take baby home. As a midwife I am interested in hearing your views about the care you receive and the information you are given.

Should you agree to participate in this study I will ask you to answer a short questionnaire before discharge from hospital and another at 6 weeks after delivery. Your answers will help us improve the care we give in the future. All information gathered will be kept in confidence and your name will not be used. Your decision to participate is entirely voluntary and you may refuse or withdraw from the study at any time without affecting any present or future treatment or care you may require.

Results of the research will be available on request and should you have any queries please contact me at any time. Once again, congratulations on the birth of your baby and may all go well in the future for you and your family.

Thank you in anticipation for your help.

ATHALIE JOHNSTON (Midwife and Researcher)

Phone Work [REDACTED]



OSBORNE PLACE
STIRLING 6021, WA
TEL. 445 2222
FAX (09) 446 3422

YOUR REF:
OUR REF:

Mrs A Johnston

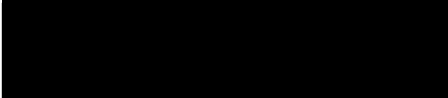

22 January, 1992

Dear Athalie

Re: Your Research Project

This was presented to the Hospital Management Team today where it was approved. All members send their best wishes for a successful project.

We would appreciate a copy of your final project.

Yours sincerely


M J KROEBER
ACTING DIRECTOR OF NURSING



OSBORNE PLACE
STIRLING 6021, WA
TEL 445 2222
FAX (09) 446 3422

YOUR REF:
OUR REF: SOLIM

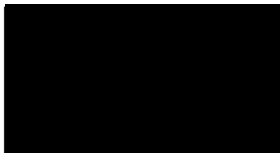
Sr. A. Johnston


Dear Sr. Johnston

Thank you for your letter dated 28 January 1992. I am delighted to be able to reinforce what everybody has agreed to do, that is for you to continue to undertake your Master of Health Science project.

Good Luck & Best Wishes.

Yours sincerely


DR. S. O. LIM
HEAD OF DEPARTMENT
OBSTETRICS & GYNAECOLOGY.

7 February 1992.