Maintaining women's perineal integrity: participatory action research study

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MAINTAINING WOMEN’S
PERINEAL INTEGRITY:
PARTICIPATORY ACTION RESEARCH
STUDY

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A thesis submitted in total fulfilment of the requirements of the degree of

Doctor of Philosophy

October 2014
THESIS DECLARATION

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university.

I acknowledge that I have read and understood the University’s rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

Name: Siti Mariam Muda

Signature: 

Date: October 2014
Problem:
Childbirth-related perineal trauma can cause long term pain, dyspareunia and both anal and urinary incontinence. The short and long term complications and suffering experienced by childbearing women as a result of perineal trauma lead to major physical, psychological and social problems and affects their quality of life. Pain experienced from perineal trauma limits the ability of women to take care of and breastfeed their babies and perform routine activities in the postnatal period. Perineal trauma is most common in primigravidae and women who have a third or fourth degree perineal tear at their first birth are at higher risk for severe anal incontinence at subsequent birth. The rate of genital tract trauma in Asian countries is 75% of which about 25% is caused by episiotomy. Although best practice guidelines recommend against routine episiotomy, in Malaysia, the setting for this study episiotomy is liberally used; particularly for primiparous women.

Research question:
How can midwifery practice be improved to optimise perineal outcomes for birthing women?
Research Methods:

Participatory Action Research (PAR) is the research design. Two cycles of PAR were conducted in 2011. The first cycle focussed on gathering baseline data, both quantitative and qualitative and building consensus and support for changing practice. The second cycle focussed mainly on educating large numbers of staff and evaluating the impact of this PAR study on policy and practice.

Participants:

There were 119 participants involved in data collection; 6 staff participated in individual interviews, 16 staff participated in focus groups, 10 staff participated in PAR group and 87 staff participated in a survey.

Setting:

A large tertiary, metropolitan hospital in Kuala Lumpur, Malaysia.

Key Findings:

This dissertation will defend the thesis that midwifery practice can be changed to optimise perineal outcomes if a Participatory Action Research approach to change is supported by the relevant managers. Perineal trauma is minimised when birth happens in an environment that is perceived by the woman to be physically and emotionally safe. Factors that minimise perineal trauma include; adopting a non-supine position for the birth, using urge to push only, applying warm packs to the perineum during late second stage and avoiding obstetric and anaesthetic interventions. The avoidance of episiotomy and taking a ‘hands-off’ approach to assisting at birth also reduces perineal trauma rates.
The three most important factors for promoting positive practice change were: Management Involvement and Support; New Evidence-Based Midwifery Practice Guidelines and Focussed Staff Training. These three factors are, I believe, highly beneficial to any researcher or practitioner who is seeking to bring about practice change. The success of this PAR study is shown by the decreased rate of episiotomy at the site of the study.

**Conclusion:**

This PAR project identified, discussed and addressed the factors that affect perineal trauma rates, leading to a decrease in perineal trauma in women accessing the study site for birth. The three most important factors for promoting positive practice change were: Management Involvement and Support; New Evidence-Based Midwifery Practice Guidelines and Focussed Staff Training.
SCHOLARSHIP RECEIVED DURING THIS RESEARCH

Ministry of Higher Education (MoHE) which is under Malaysian Government: Approximately $16,000 per annum was awarded in October, 2009 for three years; following one year of extension was terminated in October 2013.

International Islamic University of Malaysia (IIUM) which covered family allowance: Approximately $12,000 per annum was awarded in October 2009; following an extension terminated in April 2013.

Research Funds from School of Nursing & Midwifery, the University of Newcastle: $3,000 awarded in October 2009 to August 2011.

Research Funds from School of Health & Human Sciences, Southern Cross University: $1,500 awarded in August 2011 to October 2013.

Conference Presentation with Abstract Published:

2010

*Poster presentation:*

2011

Oral presentation:
1) 1st National Nursing Conference 14th & 16th June, 2011, Kota Bharu, Kelantan, Malaysia.

Poster presentation:
2) 1st International & Scientific Nursing Conference, International Islamic University Malaysia on 3rd & 5th December, 2011, Kuantan, Pahang, Malaysia.


2012

Guideline Book

2013

Oral presentation

1) 3rd Malaysian Postgraduate in Australia Colloquium 3 & 4 July 2013 Consulate of Malaysia, Sydney


2) Australian Nursing and Midwifery Conference 17 & 18 October 2013 Newcastle City Hall, Newcastle, New South Wales.
Invited presentation


1) Academic Thai Visitor from School of Nursing and Midwifery Kuakarun Faculty University Metropolitan Bangkok. Program on 23 April 2013 at Room B3.35 Southern Cross University Gold Coast Campus.

2) Midwives from Tweed Hospital & Community Meeting on 1st May 2013 at Room B3.35 Southern Cross University, Gold Coast Campus.


3) Midwifery Forum 2013 – Innovation in Midwifery on 7th November 2013. Southern Cross University, Gold Coast Campus.
ACKNOWLEDGEMENT

“Man Jadda Wa Jada”
- Whoever is persistent will definitely achieve his/her success -

I am grateful to Allah (s.w.t) for giving me the strength and courage to keep moving with my PhD journey over a long, rigorous and complicated road. I am sincerely appreciative of the Ministry of Higher Education Malaysia and the International Islamic University Malaysia for sponsoring my study, without whom this PhD thesis would have been impossible. I deeply thank both the Executive Committee IIUM and the members of the Kulliyah of Nursing for providing constant and consistent support to me throughout the study period. Thank you to the School of Health & Human Sciences, Southern Cross University and the School of Nursing & Midwifery, Newcastle University. There are many others in both institutions who have supported and guided me during my research process. To them I extend my deepest appreciation and thank them for the many kindnesses I experienced.

This PhD thesis would not have been possible without the collaboration of two important people I have admired since the first day I started my journey. I am truly indebted to my principal supervisor, Professor Kathleen Fahy, for her unwavering commitment and brilliant ideas in making this PhD happen. I thank Ms Carolyn Hastie, my co-supervisor, for her continuous support, guidance, and encouragement throughout this study. Both academics helped me to believe in myself and my ability to carry out this research project. I feel privileged to have worked under their supervision and
professionalism. Their supervision enabled me to stay focused, develop my own ideas and complete this undertaking.

A very special thanks is extended to the Head of Department and the Nursing Director of the Department of Obstetrics and Gynaecology at KL Maternity Hospital. Their magnanimity and commitment to evidence based practice allowed me to execute my fieldwork at their premises and they provided me with full support. I am forever grateful for the enthusiasm and participation of the nurses and midwives during the data collection process. I feel very honoured to have worked with them during that stage of the project.

My grateful acknowledgement also goes to the PAR group and other research participants who have generously given of their time, enabling me to capture the essential data. I believe we had a great collaborative learning experience which enhanced our knowledge and creativity in evidence-based practice and learning opportunity nurses and midwives. I acknowledge their co-operation and thank them for giving time when they are fully committed to their routine work.

My heartfelt thanks goes to my lovely husband, Zamri Manap for his unwavering support and encouragement during the many hours I dedicated to achieve this milestone in my life. And of course, my warmest gratitude is dedicated to all of my beautiful children: Ain Mawaddah Zamri, Amir Syafiq Zamri, and Ammar Hafizuddin Zamri. Finally, thank you to both Muda’s and Manap’s families. They gave me strength, courage, and love which inspired my success throughout my pursuit of this PhD. My endless gratitude and love would never be enough.
DEDICATION

I would like to dedicate this thesis to my late father and mother:

Allahyarham Tuan Haji Muda bin Taib and Allahyarhamah Puan Hajjah Minah bt Ali.

May both of you rest peacefully in heaven.

_Amen Ya Rabbal ‘Alamin_

"How lucky I am to have something that makes saying goodbye so hard."

- A.A. Milne -
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM</td>
<td>The Australian Colleges of Midwives</td>
</tr>
<tr>
<td>ACOG</td>
<td>The American College of Obstetric</td>
</tr>
<tr>
<td>BCG</td>
<td>Bacilli-Chalmette-Guerin</td>
</tr>
<tr>
<td>BTT</td>
<td>Birth Territory Theory</td>
</tr>
<tr>
<td>CI</td>
<td>Confident interval</td>
</tr>
<tr>
<td>DPT</td>
<td>Diphtheria, pertussis and tetanus</td>
</tr>
<tr>
<td>EBP</td>
<td>Evidence-based practice</td>
</tr>
<tr>
<td>EPAU</td>
<td>Early pregnancy assessment unit</td>
</tr>
<tr>
<td>FIGO</td>
<td>The International Federation of Gynaecology and Obstetric</td>
</tr>
<tr>
<td>G6PD</td>
<td>Glucose-6-phosphate dehydrogenase</td>
</tr>
<tr>
<td>GTT</td>
<td>Glucose Tolerance Test</td>
</tr>
<tr>
<td>HDW</td>
<td>High dependency ward</td>
</tr>
<tr>
<td>ICM</td>
<td>The International Confederation of Midwives</td>
</tr>
<tr>
<td>KL</td>
<td>Kuala Lumpur</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal and Child Health Services</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>MMR</td>
<td>Measles, mumps and rubella</td>
</tr>
<tr>
<td>MOH</td>
<td>The Ministry of Health Malaysia</td>
</tr>
<tr>
<td>MoHE</td>
<td>The Ministry of Higher Education Malaysia</td>
</tr>
<tr>
<td>MOT</td>
<td>Maternity operation theatre</td>
</tr>
<tr>
<td>NMRR</td>
<td>The National Medical Research Register</td>
</tr>
<tr>
<td>O&amp;G</td>
<td>Obstetrics and Gynaecology</td>
</tr>
<tr>
<td>OR</td>
<td>Odd ratio</td>
</tr>
<tr>
<td>PAR</td>
<td>Participatory action research</td>
</tr>
<tr>
<td>PPT</td>
<td>Power Point Presentation</td>
</tr>
<tr>
<td>RCOG</td>
<td>The Royal College of Obstetrics and Gynaecology</td>
</tr>
<tr>
<td>RCT</td>
<td>Randomised control trial</td>
</tr>
<tr>
<td>TBA</td>
<td>The traditional birth attendants</td>
</tr>
<tr>
<td>WHO</td>
<td>The World Health Organisation</td>
</tr>
</tbody>
</table>
CHAPTER ONE
INTRODUCTION AND BACKGROUND

This dissertation reports on a study which was conducted in Malaysia under the supervision of Australian midwifery academics. The research question was: “How can midwifery practice be improved to optimise perineal outcomes for birthing women?

This chapter introduces the dissertation and provides the background of the study. There are five main sections. The first section is an introduction to the chapter; the research question and definitions of key terms are presented. The second section outlines the research problem regarding the frequency and severity of perineal trauma together with the impact of the trauma on women’s short and long term health. Next, the geography and demographics of Malaysia are described and the selection of the study site is justified. The Malaysian health care system, particularly with regard to nursing and midwifery, is then described. My personal background and interest in the study are detailed in section four. Lastly, section five provides an overview of the whole dissertation.

The key terms used in this study are defined below in Table 1.1 and included in Appendix V.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
</table>
| Classification of perineal wound          | 1<sup>st</sup> degree: Injury to the skin only  
2<sup>nd</sup> degree: Injury to the perineum involving perineal muscles but not involving the anal sphincter  
3<sup>rd</sup> degree: Injury to the perineum involving the anal sphincter complex;  
3a less than 50% of external anal sphincter torn  
3b more than 50% of the external anal sphincter torn  
3c External and internal anal sphincter torn  
4<sup>th</sup> degree: Injury to the perineum involving the anal sphincter complex and anal epithelium (RCOG, 2007). |
| Episiotomy                                | An episiotomy is a surgical incision of the perineum, the skin and muscles between the vulva and anus in order to enlarge the vaginal opening during birthing (RCOG, 2007). |
| Perineal trauma                           | Injury to the soft tissues, nerves and/or pelvic floor muscles during the process of vaginal birth (Cunningham et al., 2010).                                                                                   |
| Labour room                               | Also known as delivery suite, delivery room, labour ward and birth suite                                                                                                                                     |
| Nurse/nurses                              | A registered nurse is a person who has undergone a formal course of nursing education and is registered with the Malaysian Nursing Board (Malaysia Nursing Board, 1998). |
| Nurse-midwives                            | A registered midwife is a person who has undergone a formal course of midwifery training and is registered with the Malaysian Midwifery Board (Malaysia Midwife Board, 1990). |
| Perineal outcomes                         | Perineal outcomes can be measured by the number of women with intact perineum and the rates of first, second, third and fourth degree tears with lower degrees of tearing being preferred (RCOG, 2007). |
Background to the Study

Perineal trauma is a common outcome of the process of vaginal birth involving injury to the soft tissues and pelvic floor muscles (Albers, Sedler, Bedrick, Teaf, & Peralta, 2005; Cunningham et al., 2010; Kettle & Tohill, 2008). In Australia, the rate of women who have some form of perineal trauma during childbirth ranges from 50% to 70% (Kettle & Tohill, 2008; Laws, Li, & Sullivan, 2010). The rate of perineal trauma in Asian countries is 75% which is similar to that in other developing countries (Lumbiganon et al., 2010).

Traumatic vaginal delivery is defined as damage or injury to the soft tissue, nerves and muscles of the woman’s pelvic floor sustained during vaginal birth (ACOG, 2007; Eskandar & Shet, 2009; Fenner, Genberg, Brahma, Marek, & DeLancey, 2003). Anal incontinence is strongly associated with occult sphincter tears and operative vaginal births (ACOG, 2007; Fenner et al., 2003). Severe anal incontinence was found to be more common following a second birth for those women who sustained a fourth degree tear during their first vaginal birth (Sangalli, Floris, Faltin, & Weil, 2000). Perineal trauma during childbirth may be associated with long term perineal pain, anal and urinary incontinence as well as dyspareunia (Albers et al., 2005; Steen, 2010). The pain experienced from perineal trauma interferes with women’s ability to take care of their babies, breastfeed, perform routine activities and engage in sexual relations (Kettle & Tohill, 2008; Liebling et al., 2004). Perineal trauma, therefore, may lead to disabling physical, psychological and social problems and affect the quality of life for the whole family (Brown & Lumley, 1998; Stamp, Kruzins, & Crowther, 2001; Priddis, Dahlen, & Schmied, 2013).
The incidence of perineal trauma is most common in primigravida women (Albers & Borders, 2007). Most women consider perineal trauma to be a normal consequence of childbirth (Steen, 2008). Women do not know the potential for these traumas to be associated with complications at a later date. Many women suffer in silence from these complications for their entire lives. Many midwives as well as birthing women passively accept the incidence of perineal trauma as an inevitable and normal consequence of childbearing (Browne, Jacobs, Lahiff, & Miller, 2010; Thompson, Roberts, Currie, & Ellwood, 2002; Walsh, 2012). Coupled with that passivity, the use of episiotomies is routine in many labour wards, including the KL Maternity Hospital. Episiotomies are employed despite evidence this surgical intervention is usually unnecessary and is associated with greater damage to the perineum than if the woman had been left to tear (Carroli & Mignini, 2009; McCandlish, 2001). The evidence is clear that trauma to the perineum can often lead to long-term complications (Boyle, 2000). Therefore, midwives have a professional responsibility and duty of care to preserve perineal integrity or at least minimise the injury (Leah, Kay, Edward, Dusty, & Patricia, 2006).

The ways in which midwives can assist women to optimise their psychophysiology (defined as the study of the human mind and its functions, especially those affecting behaviour in a given context (Oxford, 2008) for childbearing, including the promotion of perineal integrity are known, but not widely implemented. Midwives can play a major role in teaching and educating childbearing women about strategies which have the potential to minimise perineal trauma during the second stage of labour.
These strategies include position changes in labour; creating an optimal birth environment, for example by dimming lights, controlling ambient temperature, ensuring privacy, providing information about the process of second stage labour, and instructions on antenatal perineal massage (Walsh, 2012; Walsh, Green, & Shields, 2007; Walsh & Gutteridge, 2011).

Malaysia: Context for the Study

Malaysia is a country in South-East Asia. It has land borders with Thailand, Indonesia and Brunei and maritime boundaries with Singapore, Vietnam and the Philippines. This multi-racial country is divided into two regions, which are separated by the South China Sea. One region is known as Peninsular Malaysia (West Malaysia) and the other as Malaysian Borneo (East Malaysia) (see Figure 1.1). Malaysia consists of 13 states, and three federal territories. Kuala Lumpur is the official capital and the largest city in Malaysia. In Peninsular Malaysia, there are eleven states and two federal territories, whereas East Malaysia has two states (Sabah and Sarawak) and one federal territory (Wilayah Persekutuan Labuan). The system of government and the legal system in Malaysia are closely modelled on the British system, a legacy of British colonial rule. The head of state is the King (Yang di-Pertuan Agong) and the head of government is the Prime Minister.
Malaysia is famous for the diversity of ethnic groups. In 2012 the nation’s population was over 28 million. Malays, who comprise the largest ethnic group, account for about 50.4% of the population, followed by Chinese, Indians and others. Islam is the official religion and at the same time other religions are practised freely. Malaysia is also considered to be a newly industrialised market economy and the stability of the economy has contributed to a better standard of living than most other South-East Asian countries.
Health Care System

The vision of the Ministry of Health in Malaysia is “a nation working together for better health”. This vision is related to the primary objective of health care performance, which is to improve health across the nation (Ministry of Health Malaysia, 2012). The improvement in the health system has meant a significant increase in life expectancy at birth. The life expectancy of males has increased from 69 years to 72 years, and of females from 74 years to 76 years (Ministry of Health Malaysia, 2012). Because of the improvement in the population’s health status, Malaysia was ranked 49th out of 191 WHO member countries in the 2008 World Health Report (World Health Organisation, 2007). The overall health system of each country was assessed on their performance in regard to three WHO objectives: good health status of the population, responsiveness to health needs and fair financial contribution (World Health Organisation, 2007).

The health care system in Malaysia is divided into two sectors, public and private. The public and private hospitals in Malaysia are shown in Table 1.2 below (Ministry of Health Malaysia, 2008). General outpatient services and hospital admissions are based on an open-door policy in the public health sector. A national system controls referrals to specialist services at national referral hospitals, state hospitals and selected district hospitals. The National Quality Assurance Programme is responsible for maintaining, improving and evaluating the quality, efficiency and effectiveness of the delivery of public health services.
Table 1.2  Number of Hospitals by Sector in Malaysia

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Health</td>
<td>138</td>
</tr>
<tr>
<td>University Hospital</td>
<td>3</td>
</tr>
<tr>
<td>Military Hospital</td>
<td>2</td>
</tr>
<tr>
<td>Hospital for Aborigines</td>
<td>1</td>
</tr>
<tr>
<td>Private Hospital</td>
<td>220</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>364</strong></td>
</tr>
</tbody>
</table>

(Ministry of Health Malaysia, 2012)

The Ministry of Health (MOH) is the main healthcare provider through its extensive network of health care facilities. These health care facilities range from community clinics throughout the country, to district hospitals, to state level hospitals and finally to a national referral hospital (see Figure 1.2).
Primary health care is well established in Malaysia, as it was the focus of health care development following independence from the British in 1957. Primary health care is delivered mainly by the MOH in a two-level system. Community Clinics (rural clinics) and Maternal and Child Health Clinics in larger remote and urban areas are the first level facilities, the second level being Community Polyclinics (health clinics) (Table 1.3). “Tele-primary care” or “tele-health” has been designed by the Ministry of Health to deal with the lack of more specialised healthcare centres in remote areas. Tele-health services benefit pregnant women and children because doctors in remote areas are able to discuss concerns through consultations with specialist and doctors in other hospitals.
Table 1.3  Primary Health Care services under the Ministry of Health, Malaysia

<table>
<thead>
<tr>
<th>Type of clinic</th>
<th>Staffing</th>
<th>Scope of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Clinics</td>
<td>Community Nurse</td>
<td>Maternal and child health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Simple ailments and first aid</td>
</tr>
<tr>
<td>Maternal Child Health Clinics</td>
<td>Nurse-midwives</td>
<td>Maternal health including antenatal and postnatal care, home visits, domiciliary services and family planning</td>
</tr>
<tr>
<td></td>
<td>Community nurses</td>
<td>Child health including immunisation, developmental monitoring and home visits</td>
</tr>
<tr>
<td>Community Polyclinic</td>
<td>Family Physician, Medical officers, Nurse-midwives, Nurses, Community nurses</td>
<td><strong>Initial services</strong>&lt;br&gt;Maternal and child health&lt;br&gt;Family planning&lt;br&gt;Nutrition promotion and education&lt;br&gt;Medical care for acute and chronic diseases&lt;br&gt;School health services&lt;br&gt;Dental services&lt;br&gt;<strong>Extended Scope</strong>&lt;br&gt;Mental health&lt;br&gt;Rehabilitation for children with special needs&lt;br&gt;Elderly care&lt;br&gt;Adolescent health&lt;br&gt;Health and wellness&lt;br&gt;Accident and emergency service</td>
</tr>
</tbody>
</table>

(Ministry of Health Malaysia, 2012)
Public health services are comprehensively subsidised by the government. Primary health care in remote areas is free of charge, and a minimal fee of RM1 (equivalent to AUD 0.33) is charged for each visit in urban clinics (Ministry of Health Malaysia, 2008). In public hospitals, patients are charged in three categories according to income. The Ministry of Health subsidises 95%–98% of hospital fees for low-income families. Poor people can request exemption from hospital charges by providing supporting documents. A medical assistance fund was launched in 2003 for Malaysian citizens seeking expensive healthcare services in private hospitals which are not available in public hospitals.

Private health providers complement the government’s medical services. The expectation of and demand for high quality health services have led to the emergence of the private health sector in Malaysia. All private health care facilities and services are bound by an act passed in 1998 which requires them to work closely with the Ministry of Health which is responsible for monitoring, regulating and coordinating private hospitals.
Maternity Services in Malaysia

The Ministry of Health provides basic obstetric services in all hospitals. These services range from secondary to tertiary level care in state capital and national referral hospitals. The majority of births occur in the public facilities (see Table 1.4 below).

Table 1.4 Number of labours and births by sector in Malaysia 2010

<table>
<thead>
<tr>
<th>Place of birth</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government facilities</td>
<td>401,398</td>
<td>79.60</td>
</tr>
<tr>
<td>Private facilities</td>
<td>102,706</td>
<td>20.40</td>
</tr>
<tr>
<td>Total</td>
<td>504,104</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(Matery of Health Malaysia, 2012)

Maternal and Child Health Service (MCH)

Birth for women in the rural and remote areas of Malaysia however, has historically been the province of the traditional birth attendant (TBA). With the advent of better record keeping in the 1960s, ’70s, and ’80’s, the rate of maternal mortality and neonatal death were noted to be higher in the rural than in urban areas (Ministry of Health Malaysia, 2012). One of the government’s strategies to address this situation was to introduce trained midwives into rural areas and foster partnerships between TBAs, trained midwives and community groups.
Dangerous practices during the process of labour and birth have been discouraged and midwives, through those partnership agreements, have promoted greater awareness of the risks associated with pregnancy and childbirth. TBAs have been trained to recognise danger signs during pregnancy and delivery, to refer women at risk to health clinics, to avoid dangerous practices, and to encourage women to go to health centres for antenatal and postnatal care. This strategy has also significantly reduced the impact of community resistance to government midwives and at the same time it has offered protection to TBAs against loss of income.

The Maternal and Child Health (MCH) service was commenced in 1964 to provide primary health care for urban and rural area women and their families. Given that 70% of the population in Malaysia is comprised of women and children, this strategy is an important and effective one (Ministry of Health Malaysia, 2012). Midwives are key providers in the maternal and child health programme and have regulatory standards and practice requirements to ensure the quality of maternal and infant care.
The objectives of the development of the MCH are:

1. Family planning and counselling, risk assessment and referral for appropriate medical care

2. Antenatal screening and care for women of all risk categories.

3. Labour and birth care: provides optimal care for the mother during the birth process and identification of and timely intervention for any abnormal conditions during the birth process.


The MCH is available in all facilities provided by the Ministry of Health including Health Clinics, Community Polyclinics and Community Clinics (see Table 1.5 below).
<table>
<thead>
<tr>
<th>Maternal and Child Health</th>
<th>Services</th>
</tr>
</thead>
</table>
| Maternal Health Care     | Antenatal Care  
|                          | Home Delivery for Low Risk Women  
|                          | Postnatal Care  
|                          | Family Planning  
|                          | Nutrition Education and Promotion  
|                          | Breastfeeding                                                                                                                          |
| Child health Care        | Screening for Glucose-6-phosphate dehydrogenase deficiency (G6PD) at birth  
|                          | Home visits for babies at high risk due to complications during labour and birth  
|                          | Immunisation covers Bacilli-Chalmette-Guerin (BCG), oral Polio, triple antigen (DPT), mumps, measles and Rubella (MMR), Hepatitis B and Haemophilia influenza  
|                          | Child development monitoring up to 4 years  
|                          | Nutrition assessment and food supplement for underweight and malnourished children                                                     |

(Ministry of Health Malaysia, 2008)
Nursing and Midwifery Training and Regulation

The Nursing Division of the Ministry of Health is responsible for the Malaysia Nursing Board and the Malaysia Midwife Board. These boards are responsible for the registration, practice and training of nurses and midwives. The boards also conduct licensing for related programs and their representatives attend meetings with the Ministry of Health (Malaysia Nursing Board, 1998). In Malaysia, nurses comprise 2%–3% of the female workforce and a large proportion of the health care workforce in the public sector (see Table 1.6 below).

Table 1.6 Nurses in Malaysia 2012

<table>
<thead>
<tr>
<th>Category</th>
<th>Sector</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>Registered Nurse*</td>
<td>41,184</td>
<td>14,414</td>
</tr>
<tr>
<td>Assistant Nurse</td>
<td>1,855</td>
<td>7,711</td>
</tr>
<tr>
<td>Community Nurse</td>
<td>18,147</td>
<td>-</td>
</tr>
<tr>
<td>Midwives*</td>
<td>491</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>61,677</td>
<td>22,125</td>
</tr>
</tbody>
</table>

*Total number with post basic training 21,276 (38.3%)
The establishment of nursing and midwifery schools led to an increased number of midwives and at the same time improved midwifery skills. Because most midwives are government employed, as the number of trained midwives in Malaysia grew, so too did the number of safe births. In the 1980s, maternal mortality fell 50% and safe births increased from 38% to 98% (Ministry of Health Malaysia, 2012). In 1987, midwives were authorised to give oxytocics and intravenous infusions for postpartum haemorrhages during homebirths. They are now authorised to prescribe diazepam and magnesium sulphate for severe pre-eclampsia and eclampsia. Midwives have been trained in the use of the partograph during homebirths since 1993 (Ministry of Health Malaysia, 2012).

Midwifery education in Malaysia is conducted under the nursing curriculum but with different requirements to nursing. There are four levels of academic education in nursing. These are: diploma, bachelor, master and doctoral programmes. These programmes are offered in a large number of public and private universities. The Ministry of Health, in collaboration with the Ministry of Higher Education (MoHE), provides a three-year diploma programme for nurses and guarantees employment in any of the government hospitals and clinics throughout the country (Ministry of Higher Education Malaysia, 2003; Nursing Board of Malaysia, 2007).
Midwifery education has a variety of pathways. One of them is a one-year post-basic midwifery training course for registered nurses and another is a direct entry programme of two-and-a-half years as a community nurse with midwifery training. A basic midwifery programme in Malaysia was offered by the Ministry of Health (Malaysia Midwife Board, 1990). Advance Diploma in Midwifery has been offered in many nursing colleagues including in private sector. This programme is also known as post-basic midwifery programme which conducted in nursing colleges by the Ministry of Health (Malaysia Midwife Board, 1990).

The scope of Midwifery Practice

Midwifery in Malaysia is practised according to the Midwives Act 1966 (Act No.54 of1966) (Malaysia Midwife Board, 1966) and the revised Act (Act 436 of 1990). Under the Laws of Malaysia, a midwife is defined as;

‘A person who for a fee, salary or other reward or compensation, performs services requiring an understanding of the principles and applications of procedures and techniques for the care of normal child-bearing women from the beginning of pregnancy until the end of the puerperium and the care of their normal infants during the neonatal period but shall not include students in midwifery schools or training institutions who perform midwifery services under the supervision of their instructors’

(Malaysia Midwife Board, 1966, p. 6)
The fundamental responsibility of a midwife is three-fold: to conserve life, to alleviate suffering and to promote health. According to the Midwives Board Malaysia, the code of professional conduct and practice of midwifery involves the following:

1. Diagnose pregnancies and carry out examinations necessary for the monitoring of maternal and foetal wellbeing and the progress of pregnancy up to term.

2. Recognize risk factors in a pregnant woman and refer promptly for further management.

3. Provide a programme of parenthood preparation and complete preparation for childbirth including advice on hygiene, nutrition and breast feeding.

4. Care for and assist the mother during labour and monitor the condition of the foetus in utero by acceptable clinical and technical means according to modern standards.

5. Conduct spontaneous deliveries, performing when required an episiotomy, repair first degree tear, and in emergency cases manage breech delivery.

6. Recognize the warning signs of abnormality in the mother or newborn which requires referral to a doctor and to assist the latter where appropriate, to take necessary emergency measures in the doctor’s absence, in particular the setting up of intravenous infusion.

7. Examine and care for the newborn, to take all initiatives which are necessary in case of need and where necessary immediate resuscitation in the event of birth asphyxia.
8. Attend to and monitor the wellbeing of the mother in the postpartum period, and to give all necessary advice to the mother and also on infant care to enable her to ensure the optimum progress of her health and that of the newborn.

9. Give injections of Hepatitis B and Vitamin K to the newborn.

10. Carry out the treatment prescribed by a doctor.

11. Provide sound family planning information and advice; prescribe oral contraceptives, condoms and other methods as required.

12. Maintain all necessary records.

13. Take cord blood for G6PD for all newborns.

(Malaysia Midwife Board, 1966, p. 2)

Midwives in Malaysia generally know that they should base their professional practice on current research findings and relevant evidence in delivering care for women. However most midwives do not know how to access and use best evidence for practice.
Kuala Lumpur Maternity Hospital

Kuala Lumpur Hospital (KL Hospital) is the largest hospital in Malaysia under the Ministry of Health and is considered to be one of the biggest in Asia. The hospital has a total of 83 wards and 2,302 beds. There are 49 different departments and units. KL Hospital is a Malaysian government tertiary referral hospital, with almost 100 professions and 7,000 workers in various fields and disciplines (Table 1.7). There are approximately 200 consultants and specialists, 500 medical officers and registrars, 10 nursing directors, 100 ward managers, 1,600 registered nurses, 750 trained assistant nurses and 40 trained midwives.

<table>
<thead>
<tr>
<th>Health professional</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultants and specialist</td>
<td>200</td>
</tr>
<tr>
<td>Medical officers and registrars</td>
<td>500</td>
</tr>
<tr>
<td>Nursing Directors</td>
<td>10</td>
</tr>
<tr>
<td>Nursing Managers</td>
<td>100</td>
</tr>
<tr>
<td>Registered Nurse with or without midwifery qualification</td>
<td>1,600</td>
</tr>
<tr>
<td>Assistant nurses</td>
<td>750</td>
</tr>
<tr>
<td>Midwives</td>
<td>40</td>
</tr>
</tbody>
</table>

(Birth Statistic, 2012)

KL Hospital has 11265 nurses who make up 34% of the total staffing of the hospital.
Department of Obstetrics and Gynaecology

The Department of Obstetrics and Gynaecology is one of the largest departments in KL Hospital (Figure 1.3). The KL maternity complex comprises antenatal wards, post-natal wards, maternity operation theatres (MOT), a labour ward with 20 labour rooms, a high dependency ward (HDW), an early pregnancy assessment unit (EPAU), an administrative section and consultation office, a conference hall and teaching centre, a fertility clinic, a day-care centre and a scanning room. The KL Maternity Hospital is the national referral centre for Obstetrics and Gynaecology services in Malaysia. Both nurses and midwives use this facility for training.

Figure 1.3  KL Maternity Hospital
A total number of 759,335 women had their babies in the KL Maternity Hospital from 1963 to 2002 (Birth Statistic, 2012). Thus, the KL Maternity Hospital is one of the largest and busiest maternity hospitals in the world. Table 1.8 below shows the total births conducted at KL Maternity Hospital at 2009 and 2012.

<table>
<thead>
<tr>
<th>Type of Birth</th>
<th>2009</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous vaginal birth (SVD)</td>
<td>8,749</td>
<td>7,865</td>
</tr>
<tr>
<td>Caesarean (LSCS)</td>
<td>3,674</td>
<td>4,199</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12,423</strong></td>
<td><strong>12,064</strong></td>
</tr>
</tbody>
</table>

(Birth Statistic, 2012)

**KL Maternity Hospital as a Study Site**

The incidence of perineal trauma (57% in 2011) in childbirth is considered high in the KL Maternity Hospital (Birth Statistic, 2012). Giving birth in the recumbent position is considered normal. Most women receive perineal massage during the second stage of labour. Malaysian midwives and doctors believe that massaging the perineum and vaginal walls every time the woman pushes during the second stage reduces the incidence and severity of tearing. In Malaysia, the percentage of episiotomies routinely performed on primigravida women is 57% to 70% depending upon the hospital (Ministry of Health Malaysia, 2012). This episiotomy rate is in stark contrast to that of 17.2% in Australia (Laws, Grayson, & Sullivan, 2006). The Malaysian Ministry of Health issued a policy in 2008 aimed at reducing the rate of episiotomies performed on labouring women to not more than 30% in each hospital (Ministry of Health Malaysia, 2008).
Obstetricians dominate the maternity systems in Malaysia. Their dominance is even greater than the dominance of obstetricians that I have read about and observed in Australia. For instance, at the KL Maternity Hospital, every woman is admitted by a doctor and her care is planned and overseen by him/her. In contrast, in Australia many hospitals support midwives to practice autonomously with women at low risk according to the National Midwifery Guidelines for Consultation and Referral (Australian College of Midwives, 2013). In Malaysia, nurses and nurse-midwives must follow medical guidelines and rules that have been formulated and endorsed by medical practitioners, and which allow midwives no autonomy (Ministry of Health Malaysia, 2008). These guidelines and rules are often vague. For example, they instruct midwives to ‘use episiotomy as needed’ but contain no evidence-based indication of how to make decisions about when an episiotomy may be advisable. Midwives therefore perform episiotomies based on personal preference rather than evidence, for instance when a birthing woman is perceived to have a ‘thick perineum’ or to be a ‘primigravida’. If a midwife doesn’t perform an episiotomy and the woman subsequently sustains a large tear, the midwife will be blamed for the tear and reprimanded. Fear of recrimination leads staff to perform more episiotomies to avoid being blamed.
Although medical and nursing/midwifery staff have likely heard of evidence-based practice, the KL Maternity Hospital, like others in Malaysia, does not have evidence-based guidelines. The library does not have access to international electronic journals so midwives are unable to access the latest evidence about the care of childbearing women. The introduction of evidence-based practice into maternity care in Malaysia is important, as the birth of a baby is the ideal time to make a difference to women’s experiences. Evidence-based practice means improved midwifery care, which means better experiences for women and their infants (Keirse & Andrews, 2006; Walsh, 2012). Therefore, as a midwife, researcher and academic, I have conducted research which can be used as a platform to uplift and inform the midwifery profession and improve outcomes for childbearing women.

**My background and Interest in the Study**

I was born in Endau, Kuala Rompin, Pahang, located on the east coast of Peninsular Malaysia. My primary nursing and midwifery education/training was from the Ministry of Health Malaysia about 18 years ago. I was qualified to practise midwifery in 1996 after going through a one-year midwifery post-basic course. In 2005, I graduated with a bachelor’s degree in nursing and continued my service in a government hospital. I have been involved actively in hospital activities such as organising antenatal education and antenatal classes and became a breastfeeding coordinator. My job description also includes ensuring every pregnant woman who comes to visit the hospital receives full information and is prepared for birth. I want to keep myself busy with teaching and learning in a clinical setting until I get an offer to be a nurse/midwifery educator at one of the public universities in Malaysia.
At the beginning of my working experience in the late 1990s, medical intervention was widely used. Induction, oxytocin augmentation and enemas were, and still are, routine practices for women in labour. Maternity staff dislike women making a noise during labour and birth, and pain killers (pethidine) are popularly used to relieve labour pain and doses are scheduled every four to six hours according to the severity of the labour pain. Women in labour are not allowed to walk, especially after their membranes rupture. This decision is based on a concern that the umbilical cord could prolapse. Birthing women are put in a supine position and made to lie on a bed throughout the birth process. Psychological support and motivation is lacking, and episiotomies are a popular practice for primigravida women. In most government hospitals, only one birth position, that of lithotomy, is used. Sitting, kneeling, squatting or any other positions are not permitted to women in labour.

Now, more than thirteen years later, these practices are still carried out at most government hospitals in Malaysia. Baths, birthing pools, hot compresses or cold compresses to perineum, aromatherapy oils and homeopathy are not used. Women are not encouraged to participate in decision-making regarding pain management or methods of birth. The prevailing authoritarian approach discourages women from being involved in their birth decisions and experiences. I observed a number of women who were induced and augmented without any strong medical indications. The use of epidurals and augmentation mostly ended with caesarean sections. The rules and policies in obstetrics and gynaecology departments depend upon the decisions of the heads of the departments. Evidence-based practice is not encouraged among nurses and midwives, and they are expected to follow medical orders without any arguments.
My Birth Experience

My own experience of giving birth to three children has had a big impact in my life as a woman, mother and midwife. My first two children were born in Malaysia, one in 1997 at the university hospital, and the second in 2001 in a government hospital. The first birth experience was very challenging for me because I endured the pain unaccompanied as my husband was not allowed to be with me. A vaginal examination was done every time I complained of the extreme pain I experienced in each contraction. An enema was a routine procedure during that time, and I noticed there was little communication between the midwife and myself. Perhaps this was because I am a nurse-midwife and it was assumed that I would know everything and be ready for giving birth. I was admitted to the labour room when my cervix was 4 cm dilated. An injection of pethidine was given as I couldn’t cope with the contractions, and Entonox was also given to me. The effects of the drugs made me sleepy, and I could not remember how I went through the process of birth. However, I realised I was put in the lithotomy position during the second stage of labour. An episiotomy was performed by trainee doctors and supervised by a senior nurse. Reflecting upon my first birth experience I had felt anxiety, weakness, low self-confidence and a lack of motivation. I learned that it is important to have good moral and physical support while in labour.
I was admitted to hospital for the birth of my second child because my membranes had ruptured. This time my husband was allowed to accompany me. In the labour room, I was advised to confine myself to the bed and I was not allowed to walk or leave the bed as the midwife said that she was worried about cord prolapse due to leaking membranes. Again pethidine was given as a pain killer. I was put in the supine position during the second stage of labour with both my hands holding my legs. Perineal massage was applied during each contraction. The midwife kept asking me not to lift my buttocks on the grounds that this can cause perineal trauma. Finally, I gave birth with a first degree tear and was stitched. From my own experience, midwives should encourage birthing women to adopt a position that is comfortable for them and they should not be advised to remain supine in the bed.

My third child was born in 2008 in the United Kingdom. The experience was so different, because he was born in a developed country with advanced technology and good midwifery practice. When my membranes ruptured, I called the hospital (on advice given to me during an antenatal visit), and the midwife instructed me to keep walking and to take a hot-water bath to reduce the labour pain. The midwife also suggested I take two tablets of paracetamol and come to the hospital when contractions reached 3:10:40 seconds. At that time, I felt comfortable at home with my family. I went to the hospital when the contractions became stronger, and the bed was ready for me. A vaginal examination was done by the midwife in charge, and I noticed they made their own decisions and did the job systematically. The environment was so quiet, the lighting was dim, there were no disruptions from other staff and they asked permission from me before doing every procedure. There was food and drink for me while in labour – something that is not accessible or available in Malaysia.
I was also offered aromatherapy in labour. There were seven types of fragrances and each had different effects. I chose a fragrance that could reduce labour pain. My husband did a massage with fragrant oil during every contraction. Such a situation made me feel very confident in my ability to cope with labour pain. During the second stage of labour, I was put in an upright position, and the midwife never touched my perineum. Finally, a healthy baby boy was out, and I had an intact perineum. After the birth, I was asked to walk to the toilet, take a hot shower and cleanse my body. None of this would have been possible in Malaysia. My third birth experience made me see that the birth environment is important for enabling women to focus on their birthing without disruption, and that this safe environment, freedom to move and free from disruptions, could lead good perineal outcomes. The labour room environment should be a home-like environment, with dim lights, no interruptions and a quiet atmosphere.

What I learnt from my birth experiences is that midwifery practices in Malaysia need to change. If Malaysian midwives want to able to give midwifery care that they can be proud of, if they want be knowledgeable, educated, and capable so that they can practise to the full scope of the ICM definition of the midwife (International Confederation of Midwives, 2005) then they have to improve themselves. The use of evidence-based practice is a great foundation upon which to build a stronger midwifery profession in Malaysia.
Thesis

Midwifery practice in the KL hospital was able to be improved, with the support of senior nursing and obstetric staff, by updating midwifery practice guidelines to align with best evidence for maintaining perineal integrity and providing extensive staff training.

Objectives of the Study

The objectives of the study are:
1. To present the factors which have a known association with perineal trauma in birth.
2. To describe the factors which promote positive change in practice related to optimal perineal outcomes for birthing women.

Significance of the Thesis

This study contributes to improving midwifery practice in the labour ward by making the case for evidence based practice. Practical guidelines to optimise perineal outcomes are presented so that midwives can follow what has been found to work. Midwives should have autonomy in caring for low risk women in the second stage of labour and be able to use the practices suggested by this study. The outcomes of this study will potentially benefit midwifery in the three areas discussed below.
Midwifery Practice

In developing countries such as Malaysia, improvement in maternal health strongly depends on strengthening the health system (Pisake et al., 2010). Strengthening the health system includes recognising midwives’ scope of practice and responsibilities as health personnel and as the primary carers for women during antenatal, birth and postnatal periods. This study highlights the fact that midwifery can play a major role in providing evidence-based practice for good perineal outcomes for women in labour. The practice guidelines that have been developed through this study can easily be implemented by midwives to optimise perineal integrity.

Midwifery Education

This research identified that updating midwife's knowledge, skills and awareness is important for women’s wellbeing and perineal integrity after childbirth. The findings from this study could be used to guide midwifery educators in what to teach and how to focus on evidence-based practice. In addition, the practice guidelines highlight the importance of applying evidence-based practice to daily tasks. The information would also be useful for educators and midwives in collaborating, teaching and supervising students who are looking after women in labour.
Midwifery Research

There is a growing recognition of the need for evidence to underpin midwifery care (West et al., 2002) and so the link between practice and scientific principles is very important to midwives and the women they provide care for during their childbearing experience. Rees (2003) emphasise that midwives should be involved in midwifery research in regard to gain their knowledge and improve the quality of care for childbearing women. This study can be used as step to increasing knowledge among nurses and midwives in their workplaces. Having good knowledge of evidence-based practice and engaging in research is important in the clinical area as it could not only improve the quality of care but also improve work satisfaction for midwives.

The Overview of the Dissertation

This study has seven chapters plus appendices and references. Chapter 1 describes the background of the study. Chapter 2 provides insights into midwifery theory and theory related to the use of action research in this study. This theoretical exploration discusses and describes how birthing women could optimise their perineal outcomes through improved midwifery care, changes to the environment, and increased autonomy for women. In Chapter 3, literature related to the research is critically examined with a specific focus on midwifery practice. The factors that can potentially be modified to optimise perineal integrity are further reviewed based on research evidence for women during the second stage of labour. Chapter 4 details the participatory action research approach which I used when working with local nurses/midwives to bring about changes to practice.
Chapter 5 presents the research findings which contribute to answering the research question. The chapter is divided into two sections. Section one describes Cycle 1 which was concerned with investigating current knowledge, beliefs and practices in the KL Maternity Hospital related to birthing and perineal trauma. Section two describes Cycle 2 which investigated actions that had been taken to change these practices. Finally, in Chapter 6, all the findings from each chapter are discussed in relation to the research question and objectives of the study. The contributions, limitations and implications for future research are explained. This research has the potential to improve midwifery practice, education, research and health care policy in Malaysia.

Summary

This chapter has provided an overview of the thesis and a brief description of the background and context for the study. The next chapter explores the theoretical foundations of the study with a particular focus on midwifery philosophy and theory.
CHAPTER TWO

THEORETICAL FOUNDATION

This chapter presents the philosophical and theoretical foundations for the present study. The purpose of this chapter is to answer the guiding question: “How can midwifery theory be useful to a midwifery researcher who is seeking to change the usual practice in Malaysia by optimising perineal outcomes for women during childbirth?”

This chapter begins with presenting and discussing the Philosophy of Midwifery that I have come to adopt as my guide to practice. Next, The Theory of Birth Territory and Midwifery Guardianship is described, explained and applied to understand the factors that may promote or inhibit optimal perineal outcomes for women (Fahy, Hastie, & Foureur, 2008). Finally, a theory of reflection to learn from experience is presented as this theory was used by me and the members of the PAR group to learn from experiences during the study. When I first started this study, my understanding of midwifery was, in fact, very much from a medical model perspective. I uncritically accepted many practices that I now find disruptive to a woman’s birth experience and which work against a woman having a physiological labour and birth with no, or minimal, genital tract trauma. My own awakening began by really thinking in depth about the Philosophy of Midwifery as elaborated by the Australian College of Midwives. This philosophy later guided me in how to see and understand the impact of the way in which care is provided at the KL Hospital.
The key terms for this chapter are defined on the following Table 2.1.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept</td>
<td>A concept is the building block of any theory. A concept is an abstract idea of phenomena or a phenomenon (Chinn &amp; Kramer, 2010; Peterson, 2004; L. O. Walker &amp; Avant, 2005). For example, the concept ‘dog’ is not specific to a particular dog but classifies all types of four legged hairy animals who bark and can breed with each other as ‘dogs’.</td>
</tr>
<tr>
<td>Empirical</td>
<td>Empirical, for positivists, means data that is able to be verified (or not) by sense experience (Blackburn, 2008). Researchers in the alternative paradigms use the term ‘empirical’ in a broader sense (Scott &amp; Marshall, 2009, p. 214). Depending upon the particular researcher the concept of ‘empirical’ may include reflections, theories, intuitive, tacit ways of knowing, emotional and bodily responses to experience.</td>
</tr>
<tr>
<td>Paradigm</td>
<td>A set of values, beliefs, assumptions and practices that are shared by a group. In science a paradigm is seen as a framework of research outcomes and theories that inform further research and theorising (Blackburn, 2008; Kuhn, 1970).</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Broadly defined as ‘the love of knowledge, the pursuit of wisdom’. Philosophy is the advanced study of fundamental questions about existence, knowledge, reasoning, morals, politics and/or aesthetics. The main branches of philosophy today are: ontology, epistemology, logic and ethics (Blackburn, 2008; Teichman &amp; Evans, 1999).</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Propositions</td>
<td>Propositions are statements of relationship between two or more concepts. Propositional statements provide theory with descriptive, explanatory or predictive powers (Chinn &amp; Kramer, 2010; Fawcett, 2005; L. O. Walker &amp; Avant, 2005).</td>
</tr>
<tr>
<td>Psychophysiology</td>
<td>A study of the human mind and its functions, especially those affecting behaviour in a given context (Oxford, 2008)</td>
</tr>
<tr>
<td>Theory</td>
<td>Theory means a systematic view of phenomena by specifying the interrelationships between concepts using definitions and propositions with the purpose of description, explanation and prediction (Brayar, 1995; Brayar &amp; Sinclair, 2011; Chinn &amp; Kramer, 2010; Scott &amp; Marshall, 2009).</td>
</tr>
</tbody>
</table>

(Fahy & Parratt, 2012)
**Midwifery Philosophy**

Philosophy by definition is a discipline focused on the search for meaning, purpose and reality (Chinn & Kramer, 2010). Professional philosophy is also an expression of the shared values, attitudes and beliefs which guide practice (Chinn & Kramer, 2010; Fawcett, 2005).

The professional philosophy of midwifery is being ‘with woman’. ‘Midwife’ means ‘with women’ (Australian College of Midwives, 2011b). The earliest texts, including the Torah, the Bible and the Koran, contain descriptions of midwives supporting women giving birth (Odent, 1992). A midwife is internationally recognised as the specialist in normal pregnancy, labour, birth, postnatal care and support (Jay & Hamilton, 2008; RCM, 2007). In 1990, at the ICM council meeting in Kobe, the definition of a midwife was officially declared and accepted; the ICM definition of a midwife was acknowledged by the International Federation of Obstetrics and Gynaecology (FIGO) in 1991 and the World Health Organisation (WHO) in 1992. This definition of a midwife (International Confederation of Midwives, 2005) states that:

> *The midwife is a person who, having been regularly admitted to a midwifery educational programme, duly recognised in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practise midwifery.*
The midwife is recognised as a responsible and accountable professional who works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife’s own responsibility and to provide care for the newborn and the infant. This care includes preventative measures, the promotion of normal birth, the detection of complications in mother and child, the assessing of medical or other appropriate assistance and the carrying out of other emergency measures.

The midwife has an important task in health counselling and education, not only for the woman, but also within the family and community. This work should involve antenatal education and preparation for parenthood and may extend to women’s health, sexual or reproductive health and childcare’.

(International Confederation of Midwives, 2005)

The statement of Midwifery Philosophy in Australia is consistent with the ICM definition but takes a stronger woman-centred stance (see below).
Philosophy of Midwifery (The Australian College of Midwives)

‘Midwife means ‘with woman’. This meaning shapes midwifery’s philosophy, work and relationships. Midwifery is founded on respect for women and on a strong belief in the value of women’s work of bearing and rearing each generation. Midwifery considers women in pregnancy, during childbirth and early parenting to be undertaking healthy processes that are profound and precious events in each woman’s life. These events are also seen as inherently important to society as a whole. Midwifery is emancipatory because it protects and enhances the health and social status of women, which in turn protects and enhances the health and wellbeing of society. Midwifery is a woman centred, political, primary health care discipline founded on the relationships between women and their midwives’.

(Australian College of Midwives, 2011b)

Good midwifery practice meets the standards below; standards I used in evaluating the midwifery practice I studied as part of the present research:

- “focuses on a woman’s health needs, her expectations and aspirations and encompasses the needs of the woman’s baby, and includes the woman’s family, her other important relationships and community, as identified and negotiated by the woman herself
- is holistic in its approach and recognises each woman’s social, emotional, physical, spiritual and cultural needs, expectations and context as defined by the woman herself
• recognises every woman’s right to self-determination in attaining choice, control and continuity of care from one or more known caregivers
• recognises every woman’s responsibility to make informed decisions for herself, her baby and her family with assistance, when requested, from health professionals
• is informed by scientific evidence, by collective and individual experience and by intuition
• aims to follow each woman across the interface between institutions and the community, through pregnancy, labour and birth and the postnatal period so all women remain connected to their social support systems; the focus is on the woman, not on the institutions or the professionals involved
• Includes collaboration and consultation between health professionals.”

(Australian College of Midwives, 2011b)

I have learned that midwives should be more focussed on optimising the woman’s psychophysiology and less focussed on uncritically following medical protocols and cultural routines in labour. It is also clear from this philosophy that women need midwives who are well educated in evidence-based practice to ensure that they know what care is most likely to lead to the best outcome for the woman and baby. Midwives have a duty of care to equip themselves with updated knowledge and skill and think about the philosophy that underpins their care. The elements in the philosophy statements should motivate midwives to build trusting relationships with women and ensure a suitable environment for birth.
Midwifery Theory

A theory presents a systematic review of phenomena by specifying the interrelationships between concepts using definitions and propositions with the purpose of explaining and predicting (Blackburn, 2008; Brayar & Sinclair, 2011; Chinn & Kramer, 2010). An example of a proposition is provided for clarification (key concepts are underlined). For example, ‘when a woman gives birth with her hands and knees on the floor, pressure on her perineum is reduced, therefore perineal trauma is minimised’.

All theories contain groups of concepts; some concepts refer to observable phenomena (e.g. perineum) whilst others are abstract (e.g. power). In the dominant research paradigm (logico-empiricism) the ‘logico’ part refers to the use of theories and hypotheses; the ‘empirical’ part refers to experience that is derived from sense data that is available for testing (and falsification) by more than one researcher (Blackburn, 2008). Researchers in the alternative paradigms use the concept of ‘empirical data’ in a broader sense i.e. any data that is gained from experience (Blackburn, 2008).
Prior to commencing this study, I reviewed several midwifery theories, seeking a way to provide information and experiences for the midwives in a structured, easy to understand format. Birth Territory Theory appeared to provide an appropriate framework that met my purposes. Birth Territory Theory is explained below. Historically, theories used in midwifery are derived from other disciplines such as sociology and psychology (Brayar & Sinclair, 2011). There are relatively few theories developed by midwives for midwifery (Crozier, Sinclair, Kernohan, & Porter, 2007). Ros Bryar (1995) edited a small collection of theories which were updated in 2011.

Kathleen Fahy, Maralyn Foureur, and Carolyn Hastie (2008) explained their Birth Territory and Midwifery Guardianship theory in a book of the same name. Another midwife, Sue Downe published her ‘Salutogenesis Theory’ in 2008 which is concerned with what we term Optimising Psychophysiology (Downe, 2012). I was most influenced by the theory Birth Territory and Midwifery Guardianship (co-written by my two supervisors in collaboration with others). This theory gave detailed information about the impact of the birthing environment on a birthing woman and the role of the midwife as a guardian of normal birth.
Birth Territory Theory

Birth Territory Theory (BTT) was developed by four leading midwifery clinicians and academics; it lends itself to considering the spectrum of experiences during childbearing (Fahy, Parratt, Foureur, & Hastie, 2011). The strength of BTT is that it is a practical, evidence-based theory that can be used to guide midwives in their practice. Moreover, the concepts within this theory are easy to understand and apply to practice. The key concepts from BTT are presented in Table 2.2.

Table 2.2 Key Birth Territory Concepts

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>Birth is defined as that period extending from peri-conception up to and including early parenting.</td>
</tr>
<tr>
<td>Birth Territory</td>
<td>Birth Territory is defined as the environment that is external to the woman/baby. The concept of Birth Territory includes the physical features of the environment (the terrain) and the use of power by people within the environment (jurisdiction).</td>
</tr>
<tr>
<td>Genius Birth</td>
<td>A genius birth is defined as one where a woman responds to labour challenges by drawing from usually hidden capacities deep within her embodied self. In actualising her inner power she combines it with her conscious intention to experience a physiologically normal birth. A genius birth is not contrived but it is conscious and effortful even if, in taking account of her holistic wellbeing at that particular moment of her life, medical interventions are accepted.</td>
</tr>
<tr>
<td>Forced Birth</td>
<td>A forced birth is defined as one where power is used to try to force a particular type of birth. A forced birth involves cutting off from one's own inner power. There are two types: medically forced and maternally forced. Neither medical nor maternal forced births are likely to be optimally suited to a woman's holistic wellbeing at that particular moment of her life. Following a forced birth a woman's feelings of self-appreciation will be limited and she is likely to focus her joy and relief on the presence of her baby.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Terrain</td>
<td>Terrain denotes the physical features and geographical area of the individual birth space, including the furniture and accessories that the woman and her support people use for labour and birth. Two sub-concepts, ‘surveillance environment’ and ‘sanctum’, lie at opposite ends along this continuum called ‘terrain’.</td>
</tr>
<tr>
<td>Jurisdiction</td>
<td>Jurisdiction means having the power to do as one wants in the birth environment. Within the broad concept of ‘jurisdiction’ there is a continuum of ‘integrative power’ to ‘disintegrative power’. Two concepts are directly derived from integrative and disintegrative power; namely ‘midwifery guardianship’ and ‘midwifery domination’.</td>
</tr>
<tr>
<td>Integrative Power</td>
<td>Integrative power integrates all forms of power within the environment towards a shared higher goal, in this case; genius birth. Using integrative power promotes mind-body integration for the woman and all other people in the environment. This mind-body integration is essential for the woman so that she feels able to respond spontaneously and expressively to her bodily sensations and intuitions.</td>
</tr>
</tbody>
</table>
‘Disintegrative power’ is an ego-centred use of power that disintegrates other forms of power within the environment and imposes the user’s self-serving goal. ‘Disintegrative power’ may be used by the woman, the midwife and/or any other person in the territory. The use of disintegrative power by anyone in the birth room may create mind-body disintegration and undermine the woman and baby in their ability to have a genius birth.

Midwifery Guardianship is a form of ‘integrative power’ that involves guarding the woman and her Birth Terrain. Guarding the Birth Territory allows the women to labour undisturbed. Midwifery Guardianship also entails nurturing the woman’s sense of safety through the respect of her attitudes, values and beliefs. Here we use the term midwife, not in the professional sense but in the active sense meaning the actions undertaken by any birth attendant to integratively 'be with' a woman.

(Fahy et al., 2011, pp. 236-239)

As this study focuses on the second stage of labour, Birth Territory Theory is used to consider ways to facilitate my aim of optimising women’s genital tract integrity in KL maternity hospital. Creating and maintaining an optimal environment; both physical and in terms of the woman’s sense of holistic safety, is the key aspect of Birth Territory Theory. The midwifery guardian’s aim is that each woman will feel safe, valued, and loved during the process of labour and birth, thereby optimising their chances of a physiologically optimal birthing experience; which includes an optimal perineal outcome (Fahy et al., 2008).
Birth Territory Theory (BTT) emphasizes the concept of physical features of the environment (the ‘terrain’) and the use of power within the environment (‘jurisdiction’) (Fahy et al., 2011). Terrain and Jurisdiction are two concepts that were considered key elements within this study. How relationships between birthing women and their environment interact to produce birth outcomes, including the integrity of the woman’s genital tract are able to be explained using Birth Territory Theory.

**Terrain**

Birth Territory ‘Terrain’ refers to the environment in the birth place, such as the furniture, equipment and other functionalities (Fahy et al., 2011). There are two elements involve in terrain; ‘sanctum’ and ‘surveillance room’.

**Sanctum**

‘Sanctum’ is defined as a homely environment. In a sanctum, privacy prevails; the door is able to be closed; the room is warm and quiet; there is easy access to the bathroom; the environment feels safe. A ‘Sanctum’ will help women in labour to feel comfortable and relaxed with the surrounding environment. In a sanctum, a woman’s integrative power is optimised, enabling her to achieve optimal physiological function and emotional wellbeing (Fahy et al., 2011).
Surveillance

The ‘surveillance room’ is a place designed for the staff’s comfort; within the surveillance room, staff can observe and act efficiently when assisting women during childbirth (Fahy & Hastie, 2008). The surveillance room is clinical; birth equipment is on display; the bed dominates, the door is kept open to allow easy access for staff and the room has a viewing window. Contrary to the relaxing effect of a ‘sanctum’, the environment of the surveillance room stimulates the woman to be on guard and alert. The surveillance room discourages optimum psychological functioning during the process of labour (Fahy et al., 2011).

Jurisdiction

Jurisdiction is related to the use of power within the environment. In this theory, power is defined as an energy which enables one to be able to do, or obtain what one wants (Northrup, 1998). Power in BTT is considered holistic and based on the assumption that universal power is what energises all living creatures and is functioning all of the time (Fahy et al., 2011). Personal power is considered to be the spirit moving and acting in human beings, and in BTT, the integration of a woman’s mind, body and spirit is most likely to achieve optimal health and wellbeing during childbearing (Fahy et al., 2011). This theory acknowledges that the power of spirit may be felt as blessed, secret or wondrous (Fahy et al., 2011). Spirit is non-rational, ever moving and acts in sometimes idiosyncratic ways as it is free of what is rationalised by people to be either possible and or impossible (Kovel, 1991).
This universal energy is everywhere within the environment and within all living and non-living people and things. The concept of power includes the notion of power as spirit. ‘Universal energy’ is the power of spirit. Universal energy is the power that energises individual people, the world and the cosmos. This concept is more familiar within Eastern, rather than in Western, philosophy (Barratt, 2006; Kovel, 1991; Irigaray & Pluhacek, 2002).

There are four inter-related identified aspects of jurisdiction. These aspects are: integrative power; disintegrative power; midwifery guardianship and midwifery domination (Fahy et al., 2008). Women feel empowered if they are able to use their own power. Integrative power serves to support the woman’s body, mind and spirit to feel good about herself and the birth of her baby, however that occurs - a ‘genius birth’ (Fahy & Hastie, 2008). Disintegrative power is when someone uses their power to disrupt all other power in the environment to gain a self-serving goal. The use of disintegrative power will disrupt a woman’s ability to feel, trust and respond spontaneously to her body sensations and intuition. As a result, the woman becomes demotivated and weakens (Fahy et al., 2011).
Midwifery Guardianship

Midwifery Guardianship is the use of power by a midwife to create a trusting relationship with the woman so that the woman feels a sense of safety (Fahy & Hastie, 2008). The warm relationship between the midwife and the woman helps the woman to feel safe and supported, both physically and physiologically (Fahy & Parratt, 2004). The assumption is, that what both women and midwives think, feel and imagine is related to physiological effects (Hastie & Fahy, 2009). Women are encouraged by midwives to use their own inner power and intrinsic capacity, to experience themselves as strong and competent and optimise her psychophysiology, thereby achieving a ‘genius birth’ without any interruptions (Fahy & Hastie, 2008; Fahy et al., 2011). This integrative role is also known as the ‘roots of midwifery’ as it is the most essential aspect of midwifery (Page & Rona, 2006). On the other hand, midwifery domination, where a midwife uses her power to further her own self-serving goal of a normal birth, undermines a woman’s sense of self and therefore the expression of her intrinsic power. The woman’s resulting anxiety and inability to make the ‘right’ decision, can lead to a ‘forced birth’ (Fahy et al., 2008).
**Genius Birth**

A ‘genius birth’ is defined as a woman who gave birth with her own strength in the best possible and uniquely, individual way, for that particular woman and at that particular moment of her life (Parratt, 2010). The combination of women’s inner power, consciousness and optimal effort is most likely to a physiologically normal birth (Fahy et al., 2011). Besides, the environment for women in labour should also be comfortable and undisturbed so they could do whatever they need in order to achieve unity in body-mind-spirit. A midwifery guardian is fully present and attentive and provides women with continuous support in the second stage of labour. The midwifery guardian suggests that women push when they feel the urge, but direct women to pant or blow if there are signs of strong expulsive pushing in an effort to minimise genital tract trauma. By guiding a woman to stay focussed and use her inner power during labour, the midwife enables the woman to maximise her physiological function and emotional wellbeing during the process of normal birth.

**Forced birth**

A forced birth is when power is used to force a particular outcome (Fahy et al., 2011). That disintegrative power may be of medical, midwifery or maternal origin (Fahy et al., 2011). The use of disintegrative power will cause a woman to lose concentration during childbirth and be unable to focus on her mind, body and baby. The woman will feel increasingly uncomfortable, fearful, nervous, and stressful. Fear and its associated stress hormones will cause the woman distress, leading to further disintegration of mind-body-spirit unity (Fahy & Hastie, 2008).
This disintegration of mind-body-spirit unity will predispose women to a prolonged labour, with the potential for genital tract trauma. The perineum is a dynamic structure that is meant to stretch slowly aided by the hormonal release triggered by the pressure of the slowly advancing head of the fetus (Cunningham et al., 2010). The perineum is easily ruptured by sudden overstretching as occurs in a forced labour and birth (Cunningham et al., 2010; Fraser & Cooper, 2009).

**Discussion**

Birth Territory Theory (BTT) provides a framework to understand the way that women’s emotions and physiological responses to their birth environment, together with issues of power and control within that birth environment, affect physiology and behaviour (Fahy & Hastie, 2008; Fahy et al., 2011). For this dissertation, the birth environment is defined as the place where women labour and birth and includes the people within that space (Fahy et al., 2008; Fahy et al., 2011). The key assumption behind BTT is that most women have the potential to given birth normally when the birth environment is optimal. On reflection, I came to appreciate that this theory is very useful in providing the framework for this research project, particularly in the second stage of labour to promote genital tract integrity.
Using the reflective process in examining BTT theory in the light of my midwifery experiences during the process of this study, I now understand the assumption that when birth environments are optimal, women are enabled to respond to their body urges and give birth with good perineal outcomes. Conversely, when women feel unsafe in the birth environment, the resultant stress disrupts their physiology leading to complications with the birth process and the increased likelihood of genital tract trauma.

The research data gathered through the review of related literature (Chapter 3) and data collection in the field (Chapter 5) will be examined through the lens of the midwifery perspective found in Birth Territory Theory.

**Dynamics of Pelvic Floor Anatomy**

This section details the anatomy of the pelvic floor and how it is related to the consequences of vaginal birth. The structure of the pelvic floor during the antenatal period and the second stage of labour is described to provide an understanding of how the process of labour and birth contributes to perineal outcomes. The genital tract, also referred to as the birth canal, is derived from the soft tissue of the pelvic floor muscle and perineum. Anatomically, the pelvic floor divided into two parts; the pelvic diaphragm and the perineum (Cunningham et al., 2010). The pelvic diaphragm is formed by the levator ani and coccygeus muscles, consisting of the pubococcygeus, pubovaginalis, puborectalis and ischiococcygeus (Cunningham et al., 2010).
These structures are depicted in Figure 2.1 below.

**Figure 2.1 The Pelvic Floor**

![Figure 2.1 The Pelvic Floor](image)

(Cunningham et al, 2010)

The pubococcygeus is the most dynamic and specialised of the pelvic floor muscles, it lies in the midline, and is perforated by the urethra, vaginal and rectum (Figure 2.2). The pelvic floor muscles interact to support the pelvis organs, prevent organ prolapse, and allows both the bladder and uterus to expand and change their positions (Cunningham et al., 2010). The pelvic floor muscles play a major role in directing the fetus downward and forward along the birth passage (Oxorn, 1986). In combination with the contractions of the uterine muscles, the pelvic floor muscles work to expel the baby during the birthing process.
Figure 2. The Structure of Pelvic Diaphragm

<table>
<thead>
<tr>
<th>Pubovisceral Muscle Complex</th>
<th>Puboanalis Muscle</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
</tr>
<tr>
<td>Pubovaginalis Region</td>
<td>Puboperinealis Muscle</td>
</tr>
<tr>
<td><img src="image3" alt="Image" /></td>
<td><img src="image4" alt="Image" /></td>
</tr>
<tr>
<td>Puborectalis Muscle</td>
<td>Vaginolevator Attachments</td>
</tr>
<tr>
<td><img src="image5" alt="Image" /></td>
<td><img src="image6" alt="Image" /></td>
</tr>
<tr>
<td>Iliococcygeus Muscle:</td>
<td>Iliococcygeus muscle:</td>
</tr>
<tr>
<td>Posterior</td>
<td>Anterior</td>
</tr>
<tr>
<td><img src="image7" alt="Image" /></td>
<td><img src="image8" alt="Image" /></td>
</tr>
</tbody>
</table>
Perineum and Perineal Body

The perineum is a diamond shape and is bound anteriorly by the symphysis pubis, posteriorly by the coccyx, and laterally by the ischial tuberosities (Cunningham et al., 2010; Klutke & Siegel, 1995). The perineal body is a wedge of fibro-muscular tissues that lies in the midline between the anus and vagina with the recto-vaginal septum. Attached to the perineal body are the rectum, connective tissue from the vagina, the pubococcygeus, perineal muscles and the anal sphincter. The perineal body also consists of smooth muscle, ligaments, elastic fibres and nerve endings (Cunningham et al., 2010).
Perineum and Pregnancy

During pregnancy, the hormone relaxin is released, making connective tissue in the pelvis, including the cervix, more elastic so that the woman’s body can adapt to the growth of the fetus and prepare for birth (Stables & Rankin, 2010). As the fetus and therefore the woman’s abdomen increases in size core abdominal and pelvic muscles stretch and weaken because of the strain supporting the extra weight of the fetus and uterus (Stables & Rankin, 2010). Constipation during pregnancy can exacerbate the tendency of the muscles of the pelvic floor to become strained and weakened.

Perineum and Childbirth

During the second stage of labour, as the uterus contracts and retracts, the fetal head pushes on the perineal body making it distend; as the contraction eases, the pressure of the fetal head on the perineum eases and the perineal body recoils (Figure 2.3). As the fetal head progresses through the birth canal towards the outlet of the pelvis, the perineal muscle layer thins, the anal sphincter and the levator ani relax and stretch and the introitus is pulled over the advancing fetal head, which can be when extensive damage to the perineal tissues occurs (Oxorn, 1986). The levator ani, followed by the pubovisceral muscles are the most prone to damage during vaginal birth (Cunningham et al., 2010). The two factors considered to determine the extent of perineal damage at birth are the efficiency and interaction of the forces of expulsion, and the forces of resistance (Fitzhugh & Newton, 1956).
Childbirth and Genital Tract Trauma

The most severe perineal tears happen during the second stage of labour at the final phase of vaginal delivery (Peschers, Schaer, & Anthuber, 1997; Zemčík et al., 2012). The most affected parts are the lower vagina, the perineum and the fasciae of the levator ani muscles (Wilson, 1969; Zemčík et al., 2012). Injury to the perineal muscles during vaginal birth can also be caused by the surgical intervention of episiotomy or from a combination of both tearing and episiotomy. Damage to the pelvic floor muscles during childbirth can result in permanent weakness of the pelvic floor. Trauma to the perineum can be classified according to the severity of the wounds and tissue layers involved.
The Figure 2.4 below depicts the degree of perineal trauma.

**Figure 2.4 The Degree of Perineal Trauma**

Classification

A: 1\textsuperscript{st} degree tear  
B: 2\textsuperscript{nd} degree tear

C: 3\textsuperscript{rd} degree tear  
D: 4\textsuperscript{th} degree tear

(Cunningham et al, 2010)
This injury may predispose women to greater risk of pelvic organ prolapse, faecal or urinary incontinence. The risk of neural damage to the pelvic floor increases with obstetric issues such as big babies and prolonged second stage of labour (Peeker & Peeker, 2003). Pelvic nerve injury after vaginal birth has been associated with instant or delayed severe urinary incontinence (Eogan, Daly, & O'Herlihy, 2006).

Urinary and faecal incontinence are more likely to be symptoms of pudendal nerve damage and tissue stretching during vaginal birth than of supportive tissue damage (Altman, Ekström, Forsgren, Nordenstam, & Zetterström, 2007). During vaginal delivery, the pudendal nerve might be injured due to cutting or over stretching. As a result, it also leads to weaknesses of the levator ani muscles and the voluntary muscles of the perineum.

Therefore, in order to understand how the process of the pelvic floor muscles movement and to protect the genital tract trauma during birth, women should know the physiology of birth and consequence of vaginal birth as valuable knowledge to prepare for childbirth and to support them while in the process of labour and birth.
Reflection to Learn from Experience

Reflection on experience is an integral part of qualitative studies and is essential in action research studies where the researcher is trying to learn how to bring about change in practice. Reflection on experience is concerned with learning from one’s own actions and inactions (Taylor, Kermode, & Roberts, 2006). Reflection is part of ‘praxis’, a Greek concept that combines doing and thinking. Praxis is conducted with a specific goal; usually a transformation of a social or practice situation that is empowering for specific, usually disempowered, individuals or groups (Buchanan, 2010). In the case of this study I used reflection as part of my research praxis as described above. The words ‘reflection’ and ‘critical reflection’ are often used interchangeably (Redmond, 2006). However, when the term of ‘critical’ is added to reflection, it means exploring the ethical and political dimensions of a situation and not just that which is immediately obvious (Thompson & Thompson, 2008).

Definition of Reflection

Reflective practice in the West is based on the work of John Dewey (1910), an American who is famous as an education philosopher and one of the fathers of Pragmatism (Dewey, 1910). He makes the assumption that reflection is transformative because it leads toward an understanding of action, which contributes to new knowledge and leads to a new and better way of doing something in practice. Reflection involves opening up one perspective for others to examine, and as a result requires courage and open mindedness, and readiness to act on criticism (Dewey, 1910).

**Model of Reflection**

Kolb’s model has four phases:

1) concrete experience (doing/feeling)
2) reflective observation (observing/thinking)
3) abstract conceptualizing (making meaning/conceptual learning)
4) active experimentation (planning and trying out change)

This model then has been further refined by Gibbs (1988) who emphasised the importance of focussing on feelings in the first two phases of Kolb’s model. Fahy (1996) further developed Gibb’s model and Wisansakoonwong et al (2011) added the need to understand feelings as the main motivators of behaviour and explicitly added a step requiring the reflective practitioner to take action to meet their own learning needs. As the Wisansakoonwong et al (2011) model included the requirement for action, this model was the best model for the purpose of this study (see figure 2.5 below).
I used this model throughout my reflective learning cycle because it helped me to critically reflect on the research practice. This model can be used to reflect on the incident from different perspectives and to identify my personal reaction to that. All the incidents and experiences were recorded, the emotion of the situation, what is good and what is bad, and evaluation of the situation will be considered. The process of learning and the exposure to knowledge and expertise become empowering because it develops more confidence in nurses and midwives abilities. It is also important for nurse and midwives to record their implicit knowledge as a transition from novice to expert (Benner, 1984) which can lead to change in practice.
This model also was used as a guide to broaden my research perspectives and understanding in promoting empowerment and to plan for transformation. In learning from weaknesses and misunderstandings of situations my knowledge and expertise were heightened.

**Summary**

This chapter has presented the theoretical foundations that influenced my understanding of the association of birth environment with perineal outcomes, including how to optimise perineal integrity and work effectively based on research evidence. Midwifery philosophy has underpinned this study and influenced every aspect of the research process. This philosophy is in contrast to the medically based nursing philosophy which is the dominant philosophy of maternity care in Malaysia. Using Wisansakoonwong et al’s (2011) model of reflection highlighted what knowledge I needed to acquire and what expertise I needed to develop. Critical reflection also helped me to see and understand the weaknesses in current practice at the study site through the framework provided by Birth Territory Theory and to develop a clear plan for changing my own practice and helping others to change theirs. These theories will be used to examine and interpret the findings of this study in subsequent sections of this dissertation. In the next chapter literature review of related research is explored and discussed in detail pertaining to optimising perineal integrity based on research evidence.
CHAPTER THREE
LITERATURE REVIEW

The previous chapter focussed on the relevant anatomy and physiology and outlined midwifery philosophy and theory that describes, explains and predicts how to optimise women's perineal integrity during the second stage of labour. This chapter critically reviews the research literature guided by the question: ‘What factors are associated with perineal trauma during birth?’

The chapter begins by defining the key terms related to this literature review. The search strategy is then described. Next, the findings of the search are presented, analysed and critiqued. Three main categories of factors related to perineal trauma during birth are then discussed. The chapter concludes with a summary of the findings of this literature review. The key terms are ‘perineal trauma’ (defined in Table 3.1 below) 'perineal integrity' and 'spontaneous birth' (defined in the glossary at Appendix V).
### Table 3.1 Definition of Key Terms

<table>
<thead>
<tr>
<th>Key terms</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Episiotomy</td>
<td>An episiotomy is a surgical incision of the perineum, the skin and muscles between the vulva and anus in order to enlarge the vaginal opening during birthing (Cunningham et al., 2010).</td>
</tr>
<tr>
<td>Spontaneous vaginal birth</td>
<td>A vaginal birth occurring without mechanical assistance of obstetric (RCOG, 2007).</td>
</tr>
<tr>
<td>Long Perineal body</td>
<td>Instead of a verbal definition please see diagrammatic representation in Appendix V.</td>
</tr>
<tr>
<td>Short Perineal body</td>
<td>Instead of a verbal definition please see diagrammatic representation in Appendix V.</td>
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Search Strategy

An online literature search was conducted to address the guiding question “what factors are associated with perineal trauma during birth?” The initial search was conducted in 2005 and repeated in 2014. An online literature search was conducted using Google Scholar, Medline, CINAHL, The Cochrane Library and MIDIRS. A comprehensive list of keywords and phrases was strictly applied to searching with synonymous terms and relevant subheadings. The search words for this review were taken directly from the key words in the guiding question. Titles, abstracts and subject headings were searched using keywords and phrases. MeSH headings were used when describing a search protocol. The search key terms including ‘perineum/perineal’ OR ‘genital tract’ AND ‘trauma; ‘factors’ OR ‘risk factors’; ‘birth’ OR ‘childbirth’ OR ‘vaginal birth’ OR ‘parturition’ were used. Articles were selected only if they were: directly relevant to the guiding question; written in English; and published after peer review. Textbooks and reports were searched by hand. The search identified more than 25,000 potentially relevant studies. We excluded articles that were not reporting research. We read the abstracts and excluded all articles that did not meet all inclusion criteria; 34 articles included in this review of which 15 were Cochrane Reviews.

The Figure 3.1 below depicts the search strategy described above.
Figure 3.1 Flowchart of Selection of Eligible Studies

Google Scholar
Medline
CINAHL
MIDIRS
The Cochrane Reviews

Hand search of
textbook and
reports

Potentially relevant studies identified
(n = >25000)

Studies screened and some excluded as not directly related to the question

Articles retrieved
(n = 194)

Studies evaluated and irrelevant studies excluded criteria
(n = 85)

Total studies included in this review
(n = 35)

RCT = 11
Systematic Review = 15
Retrospective Study = 6
Prospective Study = 1
Population Based Study = 1
Cohort = 1
Results

The results of the review of the literature, described below, discuss the factors that seem to have a causal association with perineal trauma. The non-modifiable maternal factors are age, ethnicity and nulliparity. The non-modifiable fetal factors are macrosomia and malpresentation during birth. The modifiable factors and the strategies midwives can use to minimise perineal trauma are also discussed.

Non-modifiable Factors

Nulliparity is a major risk factor for perineal trauma. An association between severe perineal trauma and primiparity is demonstrated in most of the research literature (Albers et al., 2006; Browne et al., 2010; Christianson, Bovbjerg, Mc Davitt, & Hullfish, 2003; Dahlen et al., 2007; Eskandar & Shet, 2009; Hornemann et al., 2010; Kudish et al., 2008). Two studies have found that 81% of severe perineal trauma occurred in primiparous women (Dahlen et al., 2007; Eskandar & Shet, 2009).

Maternal age of more than 35 years is an independent risk factor associated with severe perineal trauma (Baumann et al., 2007; Browne et al., 2010; Gerdin, Sverrisdottir, Badi, Carlsson, & Graf, 2007). A retrospective case-control analysis identified maternal age as the second most important risk factor (p<0.001) (after nulliparity) for severe perineal trauma (Hornemann et al., 2010).
Asian and non-African American ethnicities such as white and Hispanic women are significantly associated with severe perineal trauma during childbirth (Hopkins, Caughey, Glidden, & Laros, 2005; Jander & Lyrenas, 2001; Kudish, Sokol, & Kruger, 2008; Wheeler, Davis, Fry, Brodie, & Homer, 2012). In a cohort study (n=6595) Asian women were found to be almost twice as likely to have severe perineal trauma compared to non-Asian women (Dahlen et al., 2007). Anatomically, among Asian women, both shorter and longer than average length perineal bodies of other women are noted (Appendix V); these anatomical differences may predispose them to perineal trauma (Dua, Whitworth, Dugdale, & Hill, 2009; Rizk, 2009; Rizk, Abadir, Thomas, & Abu-Zidan, 2005; Williams, Herron-Marx, & Knibb, 2007). A long perineum creates a larger surface area of resistance to the fetal head causing over-stretching prior to and during the birth of the widest diameter. A short perineum indicates a small perineal body meaning a reduction in the amount of perineal muscle which is able to stretch as the head is emerging. This smaller amount of perineal muscle may mean that the pressure of the fetal head is more intense on less muscle mass leading to perineal tearing.

Larger babies are associated with perineal trauma. As the weight of a fetus increases, so does the severity and degree of the woman’s perineal trauma with the vaginal birth of that baby. Babies weighing more than 3.5kgs are more likely to be associated with perineal trauma that requires suturing (P= 0.05) (Soong & Barnes, 2005). Giving birth to macrosomic babies (babies weighing 4 kgs or more) increases the risk of 3rd and 4th degree tears (Albers et al., 2006; Browne et al., 2010; Dahlen et al., 2007; Hornemann et al., 2010). In cases of shoulder dystocia, which is strongly associated with macrosomic babies, the risk of severe perineal trauma was found to be increased four-fold (Dahlen et al., 2007).
Fetal malpresentation in labour, such as occiput posterior or occiput transverse positions, is a risk factor for severe perineal trauma (Christianson et al., 2003; Eskandar & Shet, 2009; Hudelist et al., 2005). Malpresentation of the fetus usually leads to prolonged second stage, instrumental birth and episiotomy (Eskandar & Shet, 2009). A systematic review of the effects of epidural anaesthesia found a 40% increased risk of perineal trauma when there is fetal malposition (Anim-Somuah, Smyth, & Howell, 2005).

**Modifiable Factors**

Factors that the midwife and woman have the potential to modify have been categorised into three domains shown in Table 3.2 below: 1) Birth territory; 2) perineal management; and 3) medication and medical intervention. Modifying these factors during the second stage of labour may reduce trauma to the perineum (Herbruck, 2008). The details of the studies related to the modifiable factors can be found in Appendix U.
Table 3.2  Modifiable Factors of Perineal Trauma

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<th>Three Domains of Modifiable Factors</th>
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<td>Perineal management</td>
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**Birth Territory**

The majority of women give birth in hospitals, which are usually controlled by obstetric policies and protocols. In hospital, women are generally subjected to surveillance and control, coupled with high rates of medical intervention and associated pelvic floor trauma (Browne et al., 2010; Erwin, 2013). However, the use of a specially designed home-like environment birth room in the hospital is associated with increased rates of spontaneous vaginal birth and lower risk of medical intervention (Hodnett, Downe, Edwards, & Walsh, 2012). Women assigned to midwife-led care had fewer operative births and lower rates of episiotomies than women in other models of care (Hodnett, Gates, Hofmeyr & Skala (2013). Even when the Birth Territory is less than ideal, i.e. midwife-led care in a conventional hospital, high spontaneous birth rates and good pelvic floor outcomes still prevail (Hodnett et al., 2013).

**Support during Birth**

Support during labour refers to the constant emotional, physical and psychological presence and advocacy received from someone the labouring woman has chosen to accompany her (Enkin, Keirse, Neilson, & et al., 2000). The presence of a person the woman has chosen to be with her during labour and birth is known to optimise women’s feelings of comfort, sense of control and competence (Walsh, 2012). A systematic review found that women with continuous support during childbirth were more likely to give spontaneously (Hodnett, Gates, Hofmeyr & Skala, 2013). Women, who received continuous labour support were also less likely to use pain medications, were more satisfied and had shorter labours (Hodnett, Gates, Hofmeyr & Skala, 2013).
These factors demonstrate how important it is that women are able to choose the person or people who can be with them throughout the birth process. Midwives have a duty of care to explain to women the benefits of labour support from someone they feel comfortable with in labour.

Pushing Techniques

In the medically managed environment of the hospital, women are directed to push when the cervix has been diagnosed fully dilated, whether they have the urge to push or not. During directed pushing, the midwife or doctor instructs the birthing woman to take a deep breath at the beginning of the contraction, hold her breath and her legs, put her chin on her chest and then push as long and hard as she can in synchrony with the contractions. An RCT, involving 100 women, compared outcomes for spontaneous pushing or directed pushing and found that directed pushing is associated with perineal and other pelvic floor injuries (Yildirim & Beji, 2008). This information demonstrates how important it is that childbearing women be informed that it is beneficial to respond to their bodies’ signals and push according to the urges they feel. There is no evidence that women need to be taught how and when to push (Bloom et al 2006) and to do so may cause harm.
Birthing Position

A systematic review (Gupta, 2012) involving 22 trials (7280 women) examined the relationship between maternal position during the second stage of labour and birth outcomes, including perineal outcomes for women without epidural anaesthesia (Gupta et al., 2012). The two research conditions to which women were assigned were: 1) upright or lateral, versus, 2) supine or lithotomy. The results showed that an upright or lateral position in the second stage of labour (NB position for birth not reported) significantly reduces the incidence of assisted birth and episiotomies. There were no differences in 3rd and 4th degree tears between the groups. There was an increase in the number of second degree perineal tears, however, in the upright group (Gupta et al., 2012). This finding contrasts with that of a large prospective study of 2,754 women which found that there was no evidence of an association between spontaneous tears and birth position (Smith, Price, Simonite & Burns, 2013).

A single RCT examined the effect of birth position on primiparous women with epidural anaesthesia and found a reduction in instrumental birth and episiotomy rates for women in the lateral compared with supine position (Downe, Young, & Moran, 2004). The lateral position was associated with a reduced need for suturing compared to the semi-recumbent for women with epidural anaesthesia in another study (Soong & Barnes, 2005). Similarly, a retrospective cohort study found an intact perineum was 47% more likely in the lateral position compared to lithotomy position (OR 0.53 CI 95% 0.36-0.78) (Meyvis et al., 2012). Univariate analysis found the lithotomy position was significantly associated with many more episiotomies (6.7% versus 38.2%, p<0.001) (Meyvis et al., 2012). These three studies provide evidence that lateral birth position may offer protection from perineal trauma when compared with the more commonly used semi-recumbent position.
In considering the research on birth position and perineal trauma it seems that Gupta et al’s (2012) work is not really very helpful because it did not distinguish between positions for pushing in 2nd stage labour and positions for the actual birth. The increase in second degree tears that Gupta et al found may be largely accounted for by their inclusion of the birth stool as part of the definition of ‘upright position’. The birth stool is a well-known cause of perineal trauma if used for a prolonged time (perineal oedema) or if used for the actual birth of the head (Dahlen et al, 2013; de Jonge, 2010). Anecdotally, many clinicians use the birth stool for pushing to bring the fetal head down the birth canal, but not for the actual birth of the baby, because of the known increased risk. Hands and knees, standing and/or kneeling positions were not found to be associated with greater genital tract integrity than the semi-recumbent position (Shorten, Donsante & Shorten, 2002). Supine position should be avoided if possible as it is associated with an increased risk of episiotomy. Gizzo, Di Gangi, Bacile and colleagues (2014) found that upright positions were of benefit to labouring women, resulting in shorter labours, reduced maternal pain, reduced operative vaginal and abdominal births and a reduction in the rate of episiotomy. Overall, women should be encouraged to use upright and/or lateral positions for mobility and to encourage descent of the fetus in the second stage labour. For the birth, the woman should be free to choose the position that suits her best.
Perineal Management

Included in this domain of modifiable factors related to perineal trauma are: antenatal perineal massage/stretching; Intra-partum perineal massage; warm compresses and hands on versus hands off techniques for the birth.

Antenatal Perineal Massage

Self-performed antenatal perineal massage is said to increase elasticity and reduce the risk of perineal trauma (Beckmann & Stock, 2013). A systematic review involving four trials (2497 women) evaluated the effects of antenatal perineal massage from four weeks prior to birth (Beckmann & Stock, 2013). Antenatal digital perineal massage was found to be associated with an overall reduction in the incidence of perineal trauma needing suturing. Primiparous women who practiced perineal massage from 35 weeks onwards were less likely to have an episiotomy.

Among the efforts to reduce episiotomies and other forms of perineal trauma amongst birthing women, a device called the Epi-NO was developed in 1999 by a German Obstetrician (Horkel, ND). The Epi-NO is an inflatable silicone balloon designed to stretch the perineum evenly. Dr Horkel was inspired to create the Epi-NO after visiting Africa in the mid 1980’s and being introduced to a childbirth preparation practice of using gourds of graduated sizes to stretch the perineum (Horkel ND). Two case controlled studies were undertaken to identify the effects of antenatal perineal massage using the Epi-NO device (Cohain, 2004; Kok et al., 2004). Both studies found that women practicing perineal massage with Epi-NO had a lower episiotomy rate (Cohain, 2004; Kok et al., 2004).
A randomised multicentre trial with the birth trainer Epi-NO for the prevention of perineal trauma was conducted in 2009 (Ruckhäberle, Jundt, Bäuerle, Brisch, Ulm, Dannecker & Schneider, 2009). Training with the Epi-NO was found to significantly increase the likelihood of having an intact perineum and reduces the episiotomy rate. Another cohort study reported a significantly higher rate of intact perineums and lower rate of perineal trauma overall for the group of women with the use of the Epi-NO trainer (Kovacs, Heath, & Heather, 2004). Women should be informed of the advantages and potential benefits of these techniques to prepare the perineal for birth.

**Perineal Management in Labour**

Perineal management techniques during the second stage of labour aimed at reducing perineal trauma were systematically reviewed in 2011 (Aasheim, Nilsen, Lukasse, & Reinar, 2011). The review involved 11,651 women in eight trials (Aasheim, Nilsen, Lukasse, & Reinar, 2011). The interventions performed during the second stage of labour in these trials included warm compresses, perineal massage (involving fingers inside the vagina rubbing and/or stretching the perineal tissue), hands-on or hands-poised techniques, flexion of the fetal head and finally a modified Ritgen’s manoeuvre (colloquially called ‘chinning’). The key findings were 1) that warm compresses to the perineum reduced the rate of third and fourth degree tears (RR 0.48 and CI 0.28 to 0.84) 2) massage of the perineum compared with ‘hands off’ the perineum reduced the rate of third and fourth degree tears (RR 0.52 and CI 0.29 to 0.94). ‘Hands off’ versus ‘hands on’ reduced the rate of episiotomy (RR 0.6 and CI 0.50 to 0.96) but with no effect on the incidence of 3rd and 4th degree tears (Aasheim et al., 2011).
Based on this review’s findings, women should be offered warm perineal compresses in second stage labour, perineal massage is supported if the woman agrees and ‘hands poised’ reduces the incidence of episiotomy but doesn’t protect the woman from 3rd and 4th degree tears. The findings from the Cochrane review need to be interpreted with caution because, as the reviewers’ noted, the methodological quality across the trials was variable; practices were insufficiently defined and there was a risk of bias in five of the trials and three trials the risk of bias was uncertain. The findings are further undermined by the apparent conflict between the benefits of hands poised and the benefits of perineal massage (Aasheim et al., 2011). A prospective observational study of 2,754 women (Smith, Price, Simonite & Burns 2013) found no evidence of an association between practices, such as water immersion, hands off the head at crowning, digital perineal stretching in second stage or maternal birth position and severe perineal injury.

The evidence for perineal massage in labour, however, was given a boost by an RCT (90 women) where the intervention was perineal massage with Vaseline in the second stage of labour compared with no perineal massage (Geranmayeh et al, 2012). More women in the massage group had an intact perineum \( (P=0.004) \). Rates of first and second degree tears were higher in the massage group, although episiotomy rates were lower. No woman in either group had a third or fourth degree tear. The researchers recommended perineal massage with Vaseline in the second stage of labour as an effective way to maintain an intact perineum during vaginal birth (Geranmayeh et al, 2011). As episiotomy rates had reduced and the number of women who emerged from labour with an intact perineum had increased in the group of women who were given perineal massage in second stage, there may be an association with those two phenomena.
The fact that there were more first and second degree tears in the intervention group compared to the control group could indicate that in fact, intrapartum perineal massage was harmful. However, a more recent study of 145 nulliparous women who were randomly assigned to either perineal massage with a sterile lubricant in second stage or to a control group (Zare, Pasha & Faramarzi 2014) found no difference in perineal outcomes between the two groups. Therefore perineal massage in labour is neither beneficial nor harmful in terms of the rate of tearing. As perineal massage in second stage of labour requires the woman to be on the bed and supine and is an invasive practice, it may be best to avoid it.

**Time Limiting the Length of the Second Stage of Labour**

A study found that as the length of second stage of labour increased so too did the risk of severe perineal tears (probably related to the use of forceps and vacuum and/or macrosomic baby) (Yildirim & Beji, 2008). One study, involving 1457 women, reported the rate of third degree perineal tear increased as the second stage lengthened (2 hours: 3% perineal tear rate and 3-4 hours: 11% perineal tear rate). The incidence of severe perineal trauma was significantly associated with a prolonged second stage of labour (p=0.001) (Yildirim & Beji, 2008). The use of operative interventions should be limited to when there is a maternal or fetal indication, rather than the imposition of an arbitrary timeframe.
**Medication and Medical Intervention**

The medications referred to in this domain include epidural anaesthesia and oxytocin augmentation of labour.

**Epidural Anaesthesia**

The use of epidural anaesthetic during labour is associated with a longer second stage, the need for oxytocin augmentation, increased operative delivery and increased rates of perineal trauma (Anim-Somuah et al., 2005).

**Oxytocins Augmentation**

Oxytocin augmentation has been found to be associated with anal sphincter tears (Jander & Lyrenas, 2001). A secondary data analysis from a randomised control trial involving 1,211 women in labour found that perineal trauma requiring sutures was increased when oxytocin infusion was used in labour \( p < 0.001 \) (Albers, Migliaccio, Bedrick, Teaf, & Peralta, 2007). Whilst the precise relationship between perineal trauma and epidural use was found to be unclear, predictors of perineal trauma that required suturing included non-Hispanic white women; those women who were having their first baby and women who had a prolonged second stage and/or were carrying a large, greater than 4000 grams fetus.
Instrumental Birth

The combination of instrumental birth and episiotomy is related to an increase risk of severe pelvic floor and perineal trauma (Dandolu et al., 2005; Kudish et al., 2008; O’Mahony, Hofmeyr, & Menon, 2010). A large population-based database analysis of 258,507 deliveries (Dandolu et al., 2005) found a total of 18,888 cases of severe perineal trauma related to forceps delivery. The shanks of the forceps may stretch the perineum and the muscles of the pelvic floor causing injury to the anal sphincter. Episiotomy was found to be associated with a threefold increase in the risk of sphincter tears (Dandolu et al., 2005). A systematic review of 32 studies involving 6597 women examined the outcomes of instrumental vaginal deliveries (O’Mahony et al., 2010). The use of forceps was associated with higher rates of perineal trauma and subsequent incontinence (O’Mahony et al., 2010).

Episiotomy

Episiotomy is a surgical incision of the perineum that severely damages the pelvic floor through the cut itself or by an extension of the episiotomy (McCandlish, 2001). Episiotomy is a routine procedure in developing countries (WHO, 2005) as it was in the West until the late 80’s. Episiotomy is associated with a higher incidence of pain during the postnatal period (Dahlen, Barclay, & Homer, 2008; Dahlen et al., 2007). Traditionally, the intention of an episiotomy has been to limit pelvic floor damage and expedite the birth of the baby (Cleary-Goldman & Robinson, 2003). A systematic review of the effects of restrictive use of episiotomy compared with routine episiotomy during vaginal birth was conducted in 2009 and updated in 2012 (Carroli & Mignini, 2009; 2012).
This review included eight randomised control trials involving 5,541 women. The study found that the restricted use of episiotomy resulted in less severe perineal trauma (RR 0.67, 95% 0.49-0.91), less suturing (RR 0.71 95% CI 0.61-2.10) and fewer healing complications (RR 0.69 95% CI 0.56-0.85). No difference was found with the occurrence of painful sex, incontinence or pain after birth, however, women did sustain increased rates of anterior genital tract damage with restrictive use of episiotomy (Carroli & Mignini, 2012). A study where women were randomised to either continuity of midwifery care or standard maternity care found that continuity of midwifery care is associated with a reduced rate of episiotomy (23.1% versus 29.4%; RR 0.79; 95% CI 0.67–0.92; \( P = 0.003 \)), even with a large proportion of nulliparous women (McLachlan, Forster, Davey et al, 2012). The study found that the rates of third-degree and fourth-degree tears between the two groups of women did not differ (McLachlan et al, 2012).

**Discussion**

A critical reading of 34 articles, including 15 Cochrane Reviews, has led to the following summary of the evidence of the actors that are associated with perineal trauma. Perineal trauma is minimised when:

1. the woman has performed antenatal perineal massage
2. birth occurs at home or in a home-like environment
3. a non-supine position for the birth of the baby is chosen
4. oxytocic augmentation is avoided
5. epidural anaesthetic is avoided
6. forceps and vacuum birth is avoided
7. pushing is spontaneous rather than directed
Since the majority of women give birth in hospitals, one way of reducing perineal trauma is to introduce midwife-led caseload models of care and to avoid all but essential medical interventions during labour and birth. In relation to perineal trauma rates, the best place for birth for women at low risk of complications is in a home or birth centre. This literature review supports the need for the current action research study which is designed to minimise perineal trauma in one maternity unit in Kuala Lumpur.

In the next chapter, the methodology that was used in this study will be detailed.
CHAPTER FOUR

METHODOLOGY

This chapter discusses the study’s action research design and qualitative methods for data collection and analysis. The research question is: *How can midwifery practice be improved to optimise perineal outcomes for birthing women?*

This question is most suited to a participatory action research approach because the focus is on engaging midwives to change their practice in the birth suite. The chapter is organised into four main sections; it begins by discussing the methodological foundations of the research. In the second section, the research design is described in detail. The aspects discussed include action research, participatory action research, practice development and the methodological commitment of action research. In the third section, research methods are discussed, in particular of the methods of data collection and data analysis. Finally research quality and rigour are presented and justified.

The key terms for this chapter are defined on Table 4.1 below.
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<th>Term</th>
<th>Definition</th>
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<td>Action Research</td>
<td>Action research is a method of enquiry, which describes, interprets and explains social situations while executing a change of intervention aimed at improvement and involvement. It is problem-focused, context-specific and future-orientated. Action research is a group activity with an explicit value basis and is founded on a partnership between action researchers and participants, all of whom are involved in the change process. The participatory process is educative and empowering, involving a dynamic approach in which problem identification; planning, action and evaluation are interlinked. Knowledge may be advanced through reflection and research, and qualitative and quantitative research methods may be employed to collect data. Different types of knowledge may be produced by action research, including practical and propositional knowledge. Theory may be generated and refined and its general application explored through cycles of the action research process (Waterman, Tillen, Dickson, &amp; de Koning, 2001).</td>
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<td>Epistemology</td>
<td>The study of how knowledge is acquired and justified. It is concerned with distinguishing between opinion, belief and prejudice by establishing secure foundations for knowledge, in particular with regard to the limits, truth and methods of how that knowledge came about (Scott &amp; Marshall, 2009).Example: the description and justification for methodological decisions in research.</td>
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<td><strong>Methodology</strong></td>
<td>The study of ontology and epistemology as applied to research. Put simply, methodology is concerned with ‘what exists’ (ontology) and ‘how we can reliably come to know something’ (epistemology). Often used to refer to research methods but is principally concerned with the wider philosophy of how research is undertaken, including issues of validity (Scott &amp; Marshall, 2009).</td>
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<td><strong>Ontology</strong></td>
<td>The study of being or what exists. Said differently, it is the study of reality (Blackburn, 2008). Example: an argument for the existence of God is an ontological one.</td>
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<td><strong>Participatory Action Research (PAR)</strong></td>
<td>PAR is a form of action research in which researchers operate as full collaborators with members of an organisation in studying and transforming the organisation. It is an ongoing organisational learning process, a research approach that emphasises co-learning, participation and organisational transformation (Greenwood &amp; Levin, 2007).</td>
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<td><strong>Practice Development</strong></td>
<td>‘Practice Development is a continuous process of developing person-centred cultures. It is enabled by facilitators who authentically engage with individuals and teams to blend personal qualities and creative imagination with practice skills and practice wisdom. The learning that occurs brings about transformation of individual and team practices. This is sustained by embedding both processes and outcomes in corporate strategy’ (McCormack, Manley, &amp; Garbett, 2008, p. 9).</td>
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<td><strong>Research</strong></td>
<td>The systematic investigation of phenomena in order to make new knowledge claims and/or reach new conclusions (Trumble &amp; Stevenson, 2003).</td>
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Methodological Foundations

Methodology is an essential part of any research project because in this section the researcher reflects upon, evaluates and justifies the methods that they used. As a non-Westerner my understanding of methodology is limited to what I needed to learn for my PhD. Put simply, my understanding is that methodology concerns ‘what exists’ (Ontology) and ‘how we can reliably come to know something’ (Epistemology) (see Table 4.1 above).

There are considered to be three main paradigms in scientific research: logical empiricism, interpretivism/constructivism and critical/post-structuralism. Logical-empiricism is a methodological research paradigm that assumes single definitive truths can be found by the objective application of logical theory to empirical facts. It produces reductionist, linear, cause and effect frameworks (Leininger, 1996). Interpretivism/constructivism is concerned with understanding intrapersonal or social experiences and their meanings. Critical researchers are concerned with understanding and changing social situations for the benefit of all involved (Walker, 1985). Critical research is largely derived from neo-Marxism and the Frankfurt School of philosophy.
The goal of critical research is to create a theory that can be used to change some aspect of society so that all people are valued and rewarded, and none are excluded or systematically disadvantaged (Leininger, 1996; Leininger & McFarland, 2002; Scott & Marshall, 2009). This study is most consistent with the critical paradigm because the medical dominance of birthing is challenged by the present study. I use an action research approach to support midwives to move away from medicalised birth towards more physiological birthing practices in which the midwives and the birthing women feel more empowered.

**Participatory Action Research Design**

This section begins with a brief overview of the historical development of action research. Next, the use of participatory action research (PAR) in health care is discussed. The use of practice development in health care is then described. A description of the model of action research used in this research is then presented. The methodological principles that were used to guide my research practice are then given and justified.

Action research has been well defined as:

*a participatory process concerned with developing practical knowing in the pursuit of worthwhile human purposes. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities* (Reason & Bradbury, 2008 p. 4).
This definition is consistent with that of other well-known action researchers (Greenwood & Levin, 2007; Kemmis & McTaggart, 2011; McNiff & Whitehead, 2011).

**Historical Development of Action Research**

The term, ‘action research’ was first used by Kurt Lewin (Lewin, 1946), a social psychologist, who was the first known researcher to involve workers in all phases of the research process. The unanticipated result was that workers became more motivated and productive (Lewin, 1946). Action research is widely used in the fields of education (Carr & Kemmis, 1984; McNiff, 2013; Stringer, 2007), business (Greenwood & Levin, 2007), community development (Reason & Bradbury, 2008) and health (Meyer, 2000).

The purpose of action research is to improve participants’ practical knowledge and their real world situation so that the social environment, within which people interact, can become more harmonious and productive (McNiff, 2013; Reason & Bradbury, 2008). All forms of action research involve working with a group and in a step by step developmental cycle. The steps may be variously named, but follow a set order of activities, including planning, acting, observing and evaluating (McNiff & Whitehead, 2011). Lewin (1946, p. 38) created a cycle which comprised planning, action and fact finding about the result from the action or evaluation. Figure 4.1 below is the action research cycle adapted from Kurt Lewin’s Model which was the form of PAR used in this study.
Another simple design of an action research cycle can be seen in Stringer (Stringer, 2007). The steps are; ‘look, think and act’. All the models of action research emphasise thinking, acting and reflecting. Virtually all action research studies involve more than one research cycle and thus the process is better conceptualised as a spiral of interrelated research cycles (Kemmis & McTaggart, 2011).
**Participatory Action Research in Health Care**

Participatory action research has a potential role to play in the improvement of health care practices and services (Meyer, 2000; Waterman et al., 2001). This is related to the ongoing reflection in the PAR cycling process and the thoughtfulness of doing research and action learning. PAR in health care resembles practice development. In health care, the combination of PAR and a practice development approach has been described as a method for developing and changing clinical practice (Manley & McCormack, 2003; Kim Manley & McCormack, 2008).

In PAR, the method is used ‘to implement change in the social situation’, whereas practice development includes ‘the implementation of research findings into clinical practice’ (McCormack, 2010; McCormack et al., 2008). These methods are interrelated with each other to ensure the success of ongoing research that is patient centred, participants and clinical area. In other words, action research and practice development activities are similar (Unsworth, 2000). Therefore, practice development has been widely adopted in health care settings and is well accepted (McCormack et al., 2009; NSW Health, 2008; Walker, 2000). In this study, the role of PAR is to empower nurse-midwives through construction of their knowledge by involving them in a process of action and reflection (McNiff & Whitehead, 2009; Reason & Bradbury, 2008).
Practice Development Research

My understanding of how to conduct participatory action research (PAR) has been influenced by the application of PAR to nursing which is often termed practice development research (McCormack et al., 2008; Meyer, 2000; Reason & Bradbury, 2008). Practice development research uses a PAR approach with the aim of assisting nurse-midwives to become more patient centred (Garbett & McCormack, 2004; Koch & Kralik, 2006; McCormack, Manley, Kitson, Titchen, & Harvey, 1999). Practice development research supports nurses, midwives and health teams to critically reflect on their practice and identify how it can be improved. As a researcher and facilitator I have a major responsibility for fostering practice development of the nurse-midwives in KL Hospital.

A sound knowledge base is important to promote learning and change (McCormack et al., 2008). Practice development distinguishes three types of knowledge: technical, practical and emancipatory (McCormack et al., 2008). Briefly, technical knowledge is about gaining expertise in a specific skill, focused on implementation of the evidence in daily work. Practical knowledge is about understanding and clarifying how to work collaboratively with others. Emancipatory knowledge concerns understanding the social and political factors that contribute to the problems experienced in practice and can be harnessed to improve practice (Wilson-Thomas, 1995). Therefore, in creating new ways of practice, a combination of these types of knowledge is desired and could help this project to deepen knowledge among nurses and midwives.
Methodological Principles to PAR

The methodological principles of PAR and practice development research are congruent (Meyer, 2000). The principles that guided me as the lead researcher for this study were based primarily on the work of nurse researchers in the area of practice development research. The principles (listed below) have been modified to be consistent with midwifery philosophy (discussed in Chapter 2).

1. The research deals with real world practical problems in real time (Greenwood & Levin, 2007; Meyer, 2000).

The study was conducted at the hospital with the nurse-midwives as the co-researchers during their working week. Learning from each other in the groups had the potential to change the nurse-midwives’ practice at KL Hospital in real time.

2. Participatory action research methodology requires that decision-making is democratic (Greenwood & Levin, 2007; Kemmis, 2008; Kemmis & McTaggart, 2011; McNiff, 2013).

All key decisions were made in the meetings, which were conducted democratically. Democracy, when applied at the group level means “equality of rights and privileges” (Macquarie Dictionary, p 384). Together, we discussed ideas and opinions and generated strategies to implement in the workplace, which would move us towards our goal.
3. Participatory action research is collaborative research involving a group of co-researchers (Kemmis & McTaggart, 2011; Reason & Bradbury, 2008; Stringer, 2007; Walsh & Moss, 2010).

Collaboration is the defining methodological principle of participatory action research. Collaboration means ‘working harmoniously together towards a known, shared goal’ (Carolyn Hastie & Fahy, 2011). Consistent with this methodological principle, in this study the co-researchers were a group of nurse-midwives who were managers and clinical leaders in the birth suite. The known, shared goal was to optimise genital tract outcomes for women in labour. All major decisions and actions occurred collaboratively using a team-based approach including, for example, data collection, conducting workshops and writing guidelines for changing practice.

4. Researcher and participants have equal power: all participants, including the nominated research leader, are involved in the research because they have relevant expertise (Denzin & Lincoln, 2011; Greenwood & Levin, 2007; Reason & Bradbury, 2008)

Power is defined as ‘the ability to do or obtain what an individual (or a group) wants’ (Fahy & Hastie, 2008). Power is ethically neutral and can be productive; it is not necessarily oppressive (Foucault, 1980; Kovel, 1991; Northrup, 1998). Consistent with this methodological principle I took special care to ensure that I avoided actions that involved ‘power over’ and I worked in ways that maximised the use of ‘power with’ the other group members.
All researchers had relevant expertise. This study involved senior staff members of the birthing suite who were part of the organisational structure of the hospital; for example, they were part of a network that went all the way to the Director of Obstetrics and the Director of Nursing. The co-researchers were expert in the hospital systems and processes, both formal and informal. This knowledge and influence was essential to enable any change to occur. Within the hospital, these nurse-midwives were seen as experts in the care of women and babies during birthing. Collectively they were responsible for the ways in which clinical nurse-midwives provided care to birthing women. As the nominated research leader my expertise was that I was a midwife with higher education and research training. I also had the support of my supervisors in conducting the study and this strengthened my potential contributions.

5. The research is conceptualised as progressing like a spiral of steps: planning, acting, observing and reflecting (Lewin, 1946; Manley & McCormack, 2008; McNiff, 2013; Reason & Bradbury, 2008).

In this study there were two complete action research cycles as described in the next section.
6. PAR focuses on change and how change happens (Carr & Kemmis, 1984; Greenwood & Levin, 2007; McCormack et al., 2009).

The findings chapter (Chapter 5) highlights the key positive changes which occurred during the study and discusses how and why these changes happened. For example, in Participatory Action Research Cycle 2, the co-researchers moved from passive involvement to active engagement in trying to solve the research problem.

7. Reflective practice is integrated into the PAR (McNiff, 2013; Reason & Bradbury, 2008; Taylor, 2006)

Reflexivity was integrated into the study in a number of ways. I adopted reflective diary writing on a regular basis from the beginning of the study. I used a diary and a digital recorder to write and tape interactions throughout the study. In addition, each co-researcher was given a logbook and invited to write reflections on their own practice. The co-researchers were encouraged to bring their reflections with them to the group meetings for sharing.

8. The research is best conceptualised as a ‘solution focussed approach’ (Greenwood & Levin, 2007; McNiff, 2013; Meyer, 2000)

Consistent with this principle this study was focussed on how to find ways to improve birthing practices so that the genital tract outcomes for women would be improved.
Understanding the facilitators and inhibitors of practice change was a key theoretical outcome that was generated by this study. As our theoretical understanding developed we began to predict what would happen if we made certain changes. For example, conducting an educational workshop for delivery suite nurse-midwives would give them the knowledge and skills that they needed to be able to make positive practice change. The cycle of generating, testing, and refining theory continued throughout the study and was completed only during data analysis and interpretation.

**Conduct of the Present Study**

This study involved two PAR cycles as shown in Figure 4.2 below. The details of what occurred in each phase are presented in the Appendix W and in the findings chapter. A brief outline is provided below to demonstrate methodological consistency between this study and PAR methodology. The first PAR cycle was preceded by a ‘Pre-engagement’ phase. Pre-engagement occurred in Australia and involved the preparatory work for the research, including gaining permission to access the site, conducting the literature review and gaining ethical approvals both at the University and in Kuala Lumpur. During the pre-engagement phase, I undertook a review of theoretical and research literature, which was presented at a national conference (see Appendix X). I translated documents such as the research proposal and educational materials into the Malay language. The Director of Nursing allocated two nurse managers to assist me with recruitment and the organisation of meetings and seminars.
The first action research cycle began once I arrived in KL. This phase involved the mutual engagement of staff, recruitment and obtaining details of current practice as baseline information.

**Phase 1: Asses and Plan**

When I entered the site I began to engage with staff with the aim of gaining their trust and support. This has been described as a negotiation stage which is crucial to developing collaboration (Meyer, 2000). Focus group interviews were held in order to inform my understanding of the current practice and knowledge related to pelvic floor integrity. Nurse Managers and senior clinicians were interviewed about their perspectives and personal reflections on possible ways to improve practice.
Evidence-based practice (EBP) literature on genital tract outcomes was presented to them and guidance and support to move ahead with planning was sought. The birth statistics were reviewed for base information on current trends of labour and birth at KL Maternity Hospital.

Recruitment

At the beginning of my time in KL, I presented the research proposal to the hospital management who gave approval for the study to be conducted at KL Maternity Hospital. As a part of the recruitment process, I also presented a brief explanation of the research project to about 30 potential participants. The research flyer and advertisement (Appendix C) were displayed on hospital notice boards. Anyone who was interested in participating in the study was invited to contact me or a research assistant to obtain an information statement (Appendix D), a consent form (Appendix E) and a pre-addressed envelope. My contact details were provided in the information package. The completed and signed consent forms were placed inside the envelopes and deposited in a confidential box in the birth suite for the researcher to collect.
Participants

A total of 119 participants were recruited: 10 participants for a participatory action research group, 6 participants for face-to-face interviews, 16 participants for focus groups and 87 participants for a survey. There were three categories of participants for this study: practising nurse-midwives, medical doctors and nurse-midwifery managers. Some of the participants were involved only in focus group interviews; some became co-researchers in participatory action research groups and individual interviews. Individual interviews were only conducted with senior doctors and nurse-midwifery managers of the hospital. Focus groups were attended by nurse-midwifery managers and practising midwives, so they could share their knowledge and experiences about current labour and birth care practices that could influence perineal outcomes.

The Co-Researchers

The PAR Group met as a group to design, conduct, reflect and evaluate the study with my guidance. The original plan was to recruit practising nurse-midwives to join the PAR. This plan was based on the methodological assumption, discussed above, that changes should come from the workers who occupy the lower ranks of an organisation (Whyte, 1991). This plan, however, did not work because there was resistance to me having a PAR group made up of clinicians. The resistance came from the senior nurse-midwifery managers in the birth suite who thought that they were the correct people to be involved in the research (more details will be discussed in the finding chapter). Given this resistance, I consulted with my supervisors and decided to accept that the PAR group would be composed of the nurse-midwifery managers.
Ethical Issues

Permission to conduct the study was granted by the ethics committee of the University of Newcastle and Southern Cross University (Code H-2011-0021) (Appendix A), Australia and by the Malaysian National Medical Research Register, Ministry of Health (Code NMRR-10-11325-7367 see Appendix B). The main ethical issues for this study concerned: 1) Recruitment, 2) Confidentiality, 3) Consent and Non-coercion, 4) Safe Storage, Access and Disposal of Data.

Do no harm

There were no physical risks to participants in this study. However, this research might have activated negative emotions among participants about their own earlier practices related to birth. It was also possible that participants might have had a negative genital tract outcome in their own past birth experiences. In this study, no counselling referrals were made throughout the research process as participants did not feel upset at any stage.
Confidentiality

Participants were informed in detail about the purpose of the study and only I was able to link participants’ names with the data. All data provided to the supervisors or within any written, reports were de-identified. Participants’ contact details were kept separately from all other research data, either in my own password-protected laptop or in paper form in a locked drawer at my office. Participants’ identities were protected using pseudonyms during data recording and/or transcription. Each participant was invited to select any name as a pseudonym and they were asked to give pseudonyms to any persons or places they mentioned during group processes. Participants were also asked to maintain the confidentiality of the group discussions and not to divulge specific content to outside parties (Appendix F).

Consent and No-coercion

The participants’ decisions to be involved in the research were entirely voluntary. All nurse- midwives were informed that no one would put any pressure on them to either participate or not participate. There were some benefits for co-researchers in the PAR group as they gained some insight into how research was conducted. They also became more knowledgeable about the use of research evidence in a maternity care practice. Participants were aware that they could withdraw from the project at any time without giving a reason and had the option of withdrawing their data.
Safe Storage, Access and Disposal of Data

All the data were kept safely according to the ethics guidelines. Data in this study were recorded in audio tapes, field notes and a reflective journal. All identifiable data that had been collected in notes, audio-tapes and computer discs were stored in a locked filling cabinet in my office. Unidentifiable data were electronically stored in my laptop with password protection. Once analyses are complete, superfluous records were destroyed.

In the final report, participants and individuals mentioned by participants were identified by the chosen pseudonyms only, and I deleted any other potential identifying information. Sections of the study were withheld from publication if they contained any details that, despite being disguised, were still identifying. The name of the hospital, the hospital director, the director of obstetrics and the director of nursing and other related names were kept secret if the results could be associated with the institution concerned. All the data are being stored at the School of Health and Human Sciences, Southern Cross University for the required duration to five years. Southern Cross University has good security and after five years, all information in the computer discs, transcripts, field notes, memos, logbooks and paper records will be destroyed according to National Health and Medical Research Council (NHMRC) procedures (National Health & Medical Research Council, 2007).
Phase 2: Act and Observe

I commenced a reflective journal. The PAR Group, consisting of 10 participants, was formed. This number was thought to be enough to generate rich and sufficient data to bring about changes in work practices (Stringer, 2007). The participants were nurse/midwifery managers, and this was acceptable for the present study because this group of participants had the required knowledge, experience and interest and also because they are the main gatekeepers to any change in nurse/midwifery practice (Krueger & Casey, 2009; Meyer, 2000; Stringer, 2007). Involving this group of nurse-midwives in the study led to a stronger sense of local ownership and made change easier (McCormack, 2010; Stringer, 2007) (PAR Group detailed in the section below). There were five PAR group meetings in Cycle 1, individual and focus group interviews were conducted and a staff survey was designed and implemented. Professor Kathleen Fahy, my primary supervisor, attended PAR group meetings and taught the group about evidence-based practice (group photo in the Findings Chapter).

Phase 3: Reflect and Evaluate

The outcomes of all forms of data collection were analysed and interpreted. This data formed the basis for the beginning of the second PAR cycle.
Participatory Action Research Cycle 2

At the start of the second research cycle my aim was to lead and support the PAR Group members in their task of providing the necessary education in evidence-based practice to the birth suite nurse-midwives. A second aim was to develop, gain approval and implement new nurse/midwifery practice guidelines to promote evidence-based practice so as to optimise perineal outcomes.

Phase 1: Plan

Beginning with the baseline information which was gathered during PAR Cycle 1, an educational programme and guidelines were planned with the PAR group.

Phase 2: Act and Observe

Cycle two began with a visit from Professor Kathleen Fahy who presented a half-day seminar to an audience of 65 health professionals, mainly nurse/midwives. She also conducted two clinical lab-based active birthing workshops. A series of educational sessions were conducted between PAR Group members and nurse-midwives from the birth suite. In the educational sessions, a summary of EBP literature was shared with all nurse-midwives (Appendix G). The educational intervention was focused on encouraging nurse-midwives to change modifiable factors to improve perineal outcomes. A summary of evidence of pelvic floor outcomes, useful articles of research related to genital tract trauma, and current midwifery practices was compiled and put in the birth suite.
The file of articles was shared with all nurse-midwives, doctors and students (Appendix H). I continuously supervised and mentored the PAR Group members during this time and regular PAR meetings continued.

In the PAR Cycle 2, the PAR group and I searched for possible ways to bring about reductions in the rates of genital tract trauma. The birth statistics were reviewed. Two more focus group meetings were held: one meeting with the PAR group and another with nurse-midwives to gain their advice about which factors might be most amenable to change.

**Phase 3: Reflect and Evaluate**

Ongoing reflections of PAR Group members, and my own reflections, were considered in the PAR group. The outcomes of all forms of data collection were analysed and interpreted. This data formed the basis for the development of clinical practice guidelines for the birth suite. The proposed guidelines were recommended to KL Maternity Hospital and approved by the Director of Obstetrics and the Director of Nursing.
Method of Data Collection

Triangulation of data collection methods is recommended as a strategy to enhance the rigour in qualitative research (Denzin & Lincoln, 2011). Consistent with the methodological principle of triangulation, six methods of data collection were used in this study.

These methods were:

1) Individual interviews with senior staff
2) focus groups with nurse-midwives
3) Action research group meetings
4) Direct observation in the birth suite
5) Staff surveys
6) Personal reflective journal.

Each of these methods will be described and defended below.
Individual Interviews

An interview can be defined as a specific form of conversation in the production of knowledge through interaction between an interviewer and interviewee (Kvale, 2007). Interviewing is a fundamental and primary tool in qualitative research (Kvale, 2007; Kvale, 1996; Seidman, 1998). Individual interviews are used to capture the perspectives of different people on the research topic (Denzin & Lincoln, 2011). There are various forms of interviews used in qualitative research, including phenomenological (Holloway & Wheeler, 2010; Koch & Kralik, 2006), oral history (P. Thompson, 2000), narratives (Elliott, 2005) and semi-structured (Kvale, 2007).

The appropriate way to conduct an interview depends upon the research question and aim. Semi-structured interviews are the best form of data collection when the purpose is to gain information from specific, selected informants who hold the knowledge required to answer the questions and the power to approve or disapprove any planned change. Semi-structured interviews are favoured over surveys when the number of key informants is small, and their position within an organisation suggests that an interview is the most respectful way to gain needed information (i.e. a survey could be seen as disrespectful).
**Pre-Planning for the Semi-structured Interviews**

The aims of the interviews were to a) gain the perspective of senior staff on current policy and practice and b) to assess their support for changing policy and practice in line with evidence-based practice. In planning the interviews I was primarily guided by Kvale (Kvale, 2007). The first step, according to Kvale (Kvale, 2007), is to write an interview guide which, in this case, was completed in Australia before data collection began (see Appendix I). In line with Kvale’s (Kvale, 2007) recommendation, the interview guide was pilot-tested on two fellow PhD students to ensure that the questions were easy to understand and flowed well. This also gave me an opportunity to polish my interview style by gaining feedback from interviewees.

**Participants**

The six most senior clinician and nurse-midwives were purposively selected and invited to be part of the study. The Head of Department of Obstetrics and Gynaecology and the Director of Nursing agreed to be identified as informants but did not want specific comments attributed to them. Four nurse-midwifery managers were also interviewed but they are not identified in this dissertation at their request.
The Settings and the Interviews

At the discretion of the participants the interviews were held in their offices or in a private meeting room within the hospital. These settings were chosen to help the interviewees feel confident and comfortable and to minimise the chances of disturbance (Kvale, 2007). Each interview lasted between one and one-and-a-half hours. All interviewees gave me permission to record their interviews using a digital audio-recorder. Again, following Kvale (Kvale, 2007), I used an open questioning style and minimised interruptions to allow the interviewees to express themselves in their own way and in their own time. I used the interview guide as a checklist throughout the interview session.

Focus Group

Focus group interviewing is a research technique to collect data from group interactions on a specific topic determined by the researcher (Barbour, 2007; Kitzinger, 1995; Krueger, 1995; Morgan, 1998). Generally, the purpose of a focus group is to explore a topic or question from the different perspectives of the group participants (Barbour, 2007; Kitzinger, 1995; Morgan, 1998). In focus groups, participants are able to clarify, discuss issues, exchange information, give opinions, convey attitudes and describe experiences (Kitzinger, 1995; Krueger & Casey, 2009). In this PAR study, a focus group approach was particularly appropriate because the participants were the nurse-midwives who worked in the birth suite and the interactive nature of the data collection method allowed participants to influence each other’s knowledge, attitudes and beliefs about the factors that affected genital tract outcomes in the birth process.
Pre-Planning for the Focus Group

I decided the aims of the focus groups prior to leaving Australia. The aims were to:

a) ascertain the levels of knowledge and skill of the participants in relation to the research question;

b) understand the different perspectives of clinical nurse/midwives and managers on current practices used in the delivery suite;

c) ascertain the levels of the participants’ knowledge about, and commitment to, the use of evidence-based practice, and

d) seek ideas on how to bring about change.

In the analysis of the data I will be looking for changes in a) and c) following the implementation of the study’s educational intervention. The data collected as part of b) and d) is important to inform the planning for change.

In planning the focus group I read and used Krueger and Casey (Krueger & Casey, 2009), Barbour (Barbour, 2007) and Morgan (Morgan, 1998). In developing the questions for the focus group the researcher begins with a question that is easy for everyone to answer. The sequence of questions should flow naturally from general questions to narrow, more specific questions. The researcher aims to use the available time wisely (Krueger & Casey, 2009). Prior to leaving Australia, the focus group interview guideline was completed and tested with a group of PhD students who were my friends. When facilitating the groups I was guided by a semi-structured questionnaire, which is the recommended strategy, as the interview needs to be structured whilst allowing flexibility (Morgan, 1998).
Participants

The interviews were conducted with two categories of staff: clinical nurse-midwives and nurse-midwifery managers. Four focus groups were conducted in total, two with each category of staff, one before and one after the planned change was implemented. I essentially asked the same questions at both time points with the aim of seeing if the educational interventions had been effective in bringing about changes in knowledge, attitudes and beliefs and ultimately, practice (see Appendix J).

The Settings and the Interviews

Focus groups sessions were conducted in the meeting room at the training centre of the Obstetrics and Gynaecology Department. As a facilitator and researcher, I made sure that the environmental conditions were favourable so that the session would run smoothly. The meeting room is well equipped with a round table, swivel chairs, power point and extension cord, and air-conditioning, all of which, together with its central location, made the meeting room the best place for the focus groups. Confidentiality was enhanced by ensuring that the door was locked for the entire sessions. Prior to starting each session the interview equipment was checked (i.e. the digital-tape recorder, notes and handouts, and the clocks). Two digital audio recorders were put in the middle of the round table so the conversation was recorded clearly. Each focus group meeting lasted approximately 90 minutes (Krueger & Casey, 2009; Morgan, 1998).
PAR Group Meeting

As described in section above, the PAR groups contributed data from the group meetings and they also contributed two focus group interviews (one pre- and one post-intervention). The conduct of the PAR groups, including the way data was recorded (audio, minutes and reflections), has also been described on the previous section.

Pre-Planning for the Group Meeting

The aims of the PAR meetings were to:

a) be co-researchers in the KL birthing study
b) provide data at various stages to the study
c) collect the data and contribute to educational sessions
d) contribute to changing practice
e) evaluate the effectiveness of change strategies.

In planning the group meetings, I was guided by Koch and Kralik (Koch & Kralik, 2006) and McIntyre (2007). There were 12 PAR group meetings, five of which were held during Cycle 1, and seven of which were held in Cycle 2. See Appendix K for more details of the plan for each meeting.
The Settings and the Meetings

Each meeting session was held at the meeting room located Obstetrics and Gynaecology Department within the hospital. Each meeting began with greetings and as a research facilitator I talked less to ensure that co-researchers had plenty of opportunity to contribute to the discussion. At the end of each session participants were encouraged to highlight any concerns and if there was no solution the matter would be brought to the next meeting. Before I left the meeting area, all documents and equipment used during the meeting were checked and placed in safe keeping. Lastly, I started a reflection on what had been done during the group meeting.

Direct Observation

Observation in action research is used by researchers to gain a true picture of the real world of those being observed and to understand their daily activities (Adler & Adler, 1998; Jorgenson, 1989; Stringer, 2007). Routines and activities in the setting are observed and recorded to provide a baseline to compare the changes that occur during the action research project. Data collected through other methods such as questionnaires or interviews can be confirmed and supported by observation (Adler & Adler, 1998). Direct observation of people’s behaviour is an alternative to self-reporting (Adler & Adler, 1998; Matthews & Ross, 2010).
Pre-Planning for the Observation

I had to be careful planning the observational phase of the study because people tend to behave differently to how they usually behave if they know they are being observed (Adler & Adler, 1998). In planning the observational techniques, I was guided by Adler and Adler (Adler & Adler, 1998) and Mathew and Ross (Matthews & Ross, 2010). It is necessary to determine when and where to observe, what specific aspects of the setting to observe, and how to record what has been observed (Matthews & Ross, 2010). According to the model I used, there are six aspects of an observed activity that need to be considered (Matthews & Ross, 2010). The questions I developed to trigger my observations around these six aspects are to be found in Appendix L.

Observation in the Birth Suite

In this study, I decided to use direct observation to observe the labour ward environment and what nurse-midwives were actually doing in practice. I had free access to the birth suite at any time for observation and discussion during the study period. I made natural and direct observations in the early phases of the research to obtain detailed baseline information about the subject of the study. The aims of observation for this study were twofold. Firstly, I wanted to build a clear picture of what practices were used by nurse midwives in their management of normal birth. Secondly, I wanted to gather information on the labour ward environment and how staff updated their knowledge to promote normal birth.
**Recording Observation**

In recording my observations of the nurse-midwives in the KL Maternity Hospital, I used a checklist, reflective notes and photographs. During my observations in the birth suite, I noted everything that I felt was interesting in relation to the study. However, in certain circumstances I had to ask staff questions about some events that occurred, to get more information and to confirm my perceptions. Field notes on my observations were written at the end of each observation session.

**Birth Statistics**

Birth statistics were updated at the end of each month by nurse-midwife who are in-charge of the statistic compilation. There is a specific book reserved in labour ward for documenting all type of birth. A report for all types of statistics were sent to the Department of Obstetrics and Gynaecology for approval and kept for record purposes.

**Learning Needs Survey**

A learning needs survey was used to gather information from nurse-midwives and other health professionals in the birth suite. The survey obtained demographic data and their attitudes towards change in labour and birth practices based on research evidence of normal births. This was a self-administered paper survey which was distributed in the birth suite only.
Pre-Planning for the Self-Administered Questionnaires

The aim of the survey was to a) access nurse-midwives’ knowledge of research evidence about normal birth, b) assess their understanding and support for changes to practice. This survey was an important tool for developing a guideline for nurse-midwives on how to use research evidence for women in labour. The survey was undertaken at the end of the first cycle of the PAR project.

I used the book on survey methodology by Groves et al. (2009) to develop the questionnaire. The questionnaire was focused on evidence-based practices for normal birth to optimise perineal outcomes. The questionnaires were distributed in both Malay and English so all staff could easily understand it. The questionnaire was divided into two parts: Part 1 comprised demographic questions and Part 2 was about knowledge of evidence-based research into birth practices (see Appendix M).

Participants

All staff working in the birth suite at KL Hospital were invited to participate in the survey. There were approximately 20 staff per shift including nurse-midwives, medical doctors and student nurse-midwives. In this survey, 87 participants successfully completed and returned the questionnaire.
The Settings and the Questionnaires

The survey focused on evidence-based practice for normal birth. A total of 110 copies of the questionnaire were distributed to all staff in the birth suite. A research assistant played a major role in distributing and collecting the questionnaire from participants. The completed questionnaires were placed in a locked bag (the project bag) located in the nurse manager's room, and were collected by myself every day over the survey period for two weeks.

Reflection

In this study, I maintained a journal to reflect on my practice as discussed in a previous section. Reflection is an important component of participatory action research. I use Beverley Taylor’s definition of reflection as ‘thinking, contemplating or meditating on thoughts and memories, in order to make sense of them and to make contextually appropriate changes if they are required’ (Taylor, 2006, p. 3). Reflection can be used to bridge the theory-practice gap because reflection has the power to uncover knowledge embedded in practice (Boud et al., 1985; Schon, 1983).

Taylor (2006) claims that there are three types of reflection that can be used by health professionals: 1) technical, 2) practical and 3) emancipatory. In this study, I primarily focused on technical reflection which is the most appropriate form of reflection to generate and validate empirical knowledge (Taylor, 2006). The phases of Taylor’s technical reflection which guided me in this research are presented in Appendix N.
Pre-planning for the reflection

In planning the reflection I was primarily guided by Taylor (2006). The aims of a reflective journal in this study were to provide:

a) a record of my thoughts and ideas throughout the research process

b) a dated record of each stage in the research, including tasks and activities

c) a record of my own learning during the research process.

As nurse-midwives engaged in daily practice, I invited them to reflect on and learn from their experiences. I encouraged them to use technical reflection and to share their learning at the group meetings. The reflections of the nurse-midwives offered me better understanding on how to develop policy and guidelines for changes to practice that were likely to be accepted by staff (Taylor, 2006; Taylor et al., 2006).

Method for Data Analysis

The methods of data analysis in qualitative research depend upon the type of data being analysed. In this project, there were six different sets of data collected. These were from: individual interviews with senior staff, focus groups with nurse-midwives, PAR Group meetings, direct observation in the birth suite, staff surveys and my personal reflective journal. In the next section, each method is discussed in relation to the data type.
Content Analysis for Interviews

Content analysis is a technique for objectively and systematically identifying the messages (meanings) contained in texts (Cole, 1988; Holsti, 1969). The aim of content analysis is to provide knowledge, insights and/or a representation of facts, including a practical guide to an action if indicated (Krippendorff, 1980). Content analysis is said to be appropriate for the analysis of any text where the researcher endeavours to understand the meanings inherent in it (Donovan & Sanders, 2005; Weber, 1990). In this study, content analysis was used to analyse the text that emerged from the six interviews I conducted. I used question-guided content analysis to understand the key messages that interviewees wanted to convey (see questions below).

Content Analysis of Interview Question

The analysis was conducted across cases and was guided by questions on the interview guide:

1. What do senior staff believe are the causes of perineal trauma?

2. What do senior staff believe is preventing clinicians from doing more to prevent perineal trauma?

3. What do senior staff believe would need to change in order to reduce perineal trauma rates?
4. Did presenting evidence-based information about the causes of perineal trauma (i.e. the poster which summarised the evidence) change anything about what senior staff believed or wanted to do to change practice?

**Process for Content Analysis**

I was primarily guided by Krippendorff (1980), Nuendorff (2002) and Cavanagh (1997) in preparing the content analysis process. I simplified their recommended steps because the type of data I was searching for in the texts was relatively straightforward and did not require the development of theoretical codes.

I began the content analysis process by transcribing all the interview data and during that process I listened to each interview at least three times. I made notes as I was listening to the interviews. When conducting the analysis I worked with each question separately and summarised the key messages that were contained in the text in relation to that question. In order to create a data trail I set up a table for each question with a column for recording the verbatim quote relevant to the analytical question. Next I had a column where I labelled the quote with an initial code. Finally, I grouped codes together and gave each group a clear label that directly addressed the question under analytical consideration (see findings in Chapter 5 for more details).
Thematic Analysis for PAR Group

Thematic analysis is a method of qualitative analysis based on actual communication episodes of participants. Thematic analysis is used to identify, analyse and report themes within the data (Braun & Clarke, 2006). In thematic analysis, the theme is identified based on recurrence, repetition and forcefulness during the meeting sessions. This process involves segmentation, categorisation, and relinking of aspects of the data prior to final interpretation (Garbich, 2007). In this study, thematic analysis was used on themes that emerged from the PAR Group meetings I facilitated. It is a useful method for working within the participatory research paradigm which involves participants as collaborators (Braun & Clarke, 2006).

Process for Thematic Analysis of PAR Group Meeting

The analysis of group meetings was guided by research questions that were created based on meeting agendas. I was guided by Braun and Clarke (2006) and Boyatzis (1998) in conducting the thematic analysis. Boyatzis (1998) recommends four steps of data analysis which I adapted for the present study:

1. Sensing themes – recognising codable moments
2. Developing and refining codes and themes
3. Doing it reliably – that is, applying codes and themes consistently
4. Interpreting themes in the context of the literature (theory and evidence)
My adaption of Boyatzis (1998) was to define the difference between codes and themes where Boyatzis uses the words somewhat interchangeably. For this study a code is a label that describes a section of data. Similar parts of data will be labelled with the same code. Codes can also be organised under higher order categories (or themes); for example, in a synthesis of ideas about the perceived causes of perineal trauma, the following three codes can be categories under the higher order theme, ‘anatomical abnormalities’: ‘thick perineum’, ‘nulliparous woman’, ‘baby too big’.

From the beginning of my analytical process I combined steps one and two of Boyatzis’s (1998) four steps. My process was rigorous, however, because I listened to the group interviews a number of times to be sure I had the correct codes and/or to systematically change the names of codes throughout if I refined a code name. I began by listening, one by one, to recordings of the meeting sessions. During analysis I took notes in which I labelled specific interview segments with data codes relevant to the interview schedule. Each of the coding notes included the initial code name, the start and finish numbers (of recording data) and the pseudonym of the person speaking. For example one note reads: ‘lack of staff skill’ at 0112-0250 ‘Mayra’. The questions that I asked in the first PAR groups were very similar to those that I had asked in the one-to-one interviews and so the coding moments were easily recognisable. Likewise the coding labels were similar to those that I used in the analysis of interviews. In step three, the process involved sorting the different codes into themes. This step involved naming the themes appropriately. The themes provide a concise and clear summary for a reader of the findings of the data analysis. At this stage, in line with ensuring an auditable data trail (Braun & Clarke, 2006) a thematic table was developed to show the relationship between codes and themes.
In step 4, ‘Interpreting themes in the context of the literature’ I discussed the themes as they can be understood and interrogated from the literature review (see Chapters 1 and 2). The discussion of findings occurs at the end of Chapter 5 “Research Results” and is also reflected in the conclusion chapter.

**Research Quality and Trustworthiness**

Research validity refers to the truth of claims of knowledge made by researchers (Whitehead & McNiff, 2006). The concept of validity in qualitative research is to do with how accurately the study represents participants’ realities of the social phenomena (Creswell, 2000; Schwandt, 1997). In the context of PAR, the word rigour is based on checks to ensure that the research outcomes are trustworthy (Stringer, 2007). Checks for trustworthiness are important to build up the veracity and validity of the information, and of the analysis (Stringer, 2007; Whitehead & McNiff, 2006).

For this study, I was guided by Lincoln and Guba (2005) and Creswell and Miller (2000). They propose comprehensive guidelines for establishing research trustworthiness and quality (see Appendix O page 23 Appendix). The four important criteria are: 1) credibility 2) transferability 3) dependability and 4) conformability. These criteria were adopted to ensure the validity of this study and further explained in Chapter 6.
Summary

The following chapter describes the action research process and data analysis that were taken with nurses and midwives throughout the study project.
CHAPTER FIVE

FINDINGS

This chapter presents the research findings which contribute to answering the research question: *How can midwifery practice be improved to optimise perineal outcomes for birthing women?*

Cycle 1 was concerned with establishing current knowledge, beliefs and practices in the KL hospital regarding birthing and perineal trauma. The findings of Cycle 1 support the view of a lack of knowledge of evidence-based practice and a lack of knowledge about active birthing practices that can minimise perineal trauma.

As shown in Figure 5.1 below, this chapter is divided into two main parts: PAR Cycle 1 and PAR Cycle 2. The findings from each phase of the PAR cycle of are presented under the headings: Assess and Plan, Act and Observe, and Reflect and Evaluate.
Figure 5.1  The PAR Cycles

**PAR Cycle 1: Activities and Findings**

The first action research cycle began once I arrived in Kuala Lumpur and focussed on the Assessing and Planning phase, including establishing the PAR group as described in Chapter 4. Data collection and analysis began in phase two, “Act and Observe”.

![Diagram of PAR Cycles](image)
**Act and Observe**

An outline of the PAR group meetings and activities from Cycle 1, including the main agenda items, is presented in Table 5.1. The PAR group meetings continued throughout Cycles 1 and 2.

<table>
<thead>
<tr>
<th>2011</th>
<th>Activity</th>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>First meeting with stakeholders</td>
<td>Research promotion</td>
</tr>
<tr>
<td>May</td>
<td>Research project presentation</td>
<td>advertisement</td>
</tr>
<tr>
<td>June</td>
<td>Malaysian Ethics approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff recruitment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1st focus group meeting*</td>
<td>Baseline Data 1</td>
</tr>
<tr>
<td>July</td>
<td>1st PAR group meeting</td>
<td>Form the PAR group</td>
</tr>
<tr>
<td></td>
<td>2nd PAR group meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd focus group meeting*</td>
<td>Baseline Data 1</td>
</tr>
<tr>
<td>August</td>
<td>Individual interview*</td>
<td>Baseline Data 2</td>
</tr>
<tr>
<td>September</td>
<td>3rd PAR group meeting</td>
<td>Educational preparation</td>
</tr>
<tr>
<td></td>
<td>Statistic review for measurement*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Birth suite observation</td>
<td>Baseline Data 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baseline Data 4</td>
</tr>
<tr>
<td>October</td>
<td>1st visit by academic supervisor</td>
<td>External support</td>
</tr>
<tr>
<td></td>
<td>Meeting with Head of O&amp;G Department</td>
<td>Baseline Data 5</td>
</tr>
<tr>
<td></td>
<td>4th PAR group meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff survey*</td>
<td></td>
</tr>
</tbody>
</table>

*Baseline information*
Gathering Baseline Data

There were 109 participants. Sixteen of them participated in focus groups, six took part in interviews and 87 completed the learning needs survey. The main focus of the findings is on the baseline data which was collected and analysed prior to attempting to bring about change in practice. Baseline data was obtained from the following sources: 1) focus groups (two pre-intervention sessions) 2) individual interviews (six participants) 3) direct observation in the labour ward 4) a review of birth statistics, and 5) the staff survey. All the details of the focus groups, interview questionnaire, and observation were planned ahead in the ‘pre-engagement phase’. The outcomes of all forms of data collection were analysed and interpreted. This data formed the basis for the beginning of the second PAR cycle.

Focus Group Pre-Intervention

Two focus group interviews were held to identify current practice and knowledge related to pelvic floor integrity. Data from the focus group interviews was subjected to content analysis and the results were categorised as coming from a pre-intervention focus group. Two major questions and answers from that content analysis are listed in Table 5.2 below.
### Table 5.2 Content Analysis for Focus Group

**Question 1: What are the major causes of perineal trauma?**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Broader Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thick/long perineum</td>
<td>Anatomical Abnormality</td>
<td>12</td>
</tr>
<tr>
<td>Nulliparous woman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby too big i.e. 4 kg or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language barrier prevents women’s cooperation</td>
<td>Lack of coordination of birthing between woman and clinician</td>
<td>9</td>
</tr>
<tr>
<td>Women lifts her buttocks against expectation/advice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precipitate labour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of clinician skill</td>
<td>Unskilled clinician did not guard the perineum</td>
<td>6</td>
</tr>
<tr>
<td>Clinician did not guard the perineum</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Question 2: How can perineal trauma be prevented?**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Broader Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricate the perineum during second stage</td>
<td>Improve staff knowledge/skills</td>
<td>29</td>
</tr>
<tr>
<td>Guard the perineum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve staff knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve staff skill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform perineal massage during second stage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Episiotomy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure maternal cooperation</td>
<td>Prepare women for birth and to follow instruction</td>
<td>18</td>
</tr>
<tr>
<td>Antenatal education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional collaboration</td>
<td>Collaboration</td>
<td>2</td>
</tr>
</tbody>
</table>
The findings for Question 1 revealed that the majority of participants considered abnormal anatomy of the pelvic floor to be the leading cause of genital tract trauma. Abnormal anatomy was ascribed to women who had a thick/long perineum, were nulliparous or had a big baby. A woman having a thick or long perineum was perceived by the participants as being unable to be protected from severe tears of her perineum.

“I believe a mother with long and thick perineum will end up with genital trauma because most cases I conducted had a perineal tear with this type of perineum” (FG1- Sally)

Nulliparous women were believed have more chance of perineal trauma than women with a big baby:

“primipara tend to suffer trauma more [than women with large babies] even if the baby weighs more than 4 kilograms”(FG1- Badar).

Apart from abnormal anatomical considerations, participants thought the lack of coordination between birthing women and clinicians during the second stage of labour can lead to perineal tears. According to participants, some women did not cooperate during the birthing process because they didn’t understand what has been said by the staff. This applied especially to women from Vietnam and Myanmar, who did not speak Malay or English. The language barrier prevents women’s from cooperating during the process of labour and birth.
“The language problem is implicated [in perineal trauma] as women don’t understand commands from midwives” (FG2-Citra).

Another factor identified by the participants was that women ‘lift their buttocks against advice’ during the second stage of labour. Normally, the midwives will instruct women not to lift their buttocks unnecessarily, particularly when pushing during the second stage, because the resulting tension may cause a big tear to the perineum. Precipitate birth also tends to tear the perineum because the perineum does not have time to stretch slowly.

Other factors believed to be involved in genital tract trauma were unskilled clinicians who did not guard the perineum:

“midwives not guarding the perineum when the baby comes out” (FG2- Abby).

The data from the second focus group was analysed to discover how the clinicians thought perineal trauma among birthing women could be prevented. The majority of staff thought the knowledge and skills of the accoucheur were a crucial determinant of whether a woman maintained perineal integrity. The knowledge and skills that the participants strongly believed were necessary for genital tract integrity were not, however, evidence based. One such practice involved the lubrication of the perineum in the second stage of labour:

‘put the oil around the perineum so that the perineum can stretch and open slowly as the baby goes out, without making any tears’ (FG1-Adibah).
Another belief was that the perineum should be massaged in order to smooth the muscle so that the baby could more easily get through the introitus:

‘when the mother starts to push, massage the perineum and gently stretch and swipe so that the perineum becomes soft.’ (FG2-Asmah)

Episiotomy was another skill that was thought by participants to be important for preventing perineal trauma. Participants believed that a cut would prevent worse tearing during a normal birth. This finding indicated the need for education of the staff regarding the disadvantages of episiotomy as this surgical intervention increases the trauma to the genital tract (Carroli & Mignini, 2009; da Silva et al., 2012).

Discussion

The focus groups data showed that the major causes of perineal trauma, according to nurses and midwives in the focus group, were anatomical abnormalities of the woman and baby but this view is not consistent with the literature discussed in Chapter 3. ‘Long and thick perineum’ was seen as the biggest contributor to genital tract trauma. There is evidence that both shorter than average perineums and longer than average perineums can predispose women to perineal trauma during childbirth (Dua, Whitworth, Dugdale, & Hill, 2009; Rizk, 2009; Rizk, Abadir, Thomas, & Abu-Zidan, 2005; Williams, Herron-Marx, & Knibb, 2007).
A lack of coordination between birthing women and clinicians was another factor cited in the focus groups as a cause of perineal trauma. There is some evidence in support of this as a lack of effective communication between midwives and women can lead to uncontrolled pushing during crowning (Dahlen, Ryan, Homer, & Cooke, 2007). The participants in the focus groups agreed that an unskilled clinician, particularly a clinician who fails to guard the perineum during birth, is also implicated in causing perineal trauma. The nurse-midwives believed that the ways to prevent perineal trauma were: i) to upgrade the skills and staff knowledge and ii) to prepare women for birthing, including by impressing upon them the need to follow the midwife’s instructions.

**Individual Interviews**

Nurse Managers and senior clinicians were interviewed about their perspectives on the report and possible ways to move forward in improving practice. There were two main questions in the interview sessions as shown in Table 5.3 below and Appendix Z.
Table 5.3  Content Analysis for Individual Interview

<table>
<thead>
<tr>
<th>Question</th>
<th>Categories</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do senior staff believe is preventing clinicians from doing more to</td>
<td>Busy medicalised environment (staff rushing and busy, need to speed up birth, rely on doctors’ orders, lack of stable staff, students needing to practice)</td>
<td>9</td>
</tr>
<tr>
<td>prevent perineal trauma?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What do senior staff believe would need to change in order to reduce</td>
<td>Resistance to change (including not our culture/staff attitudes/recumbent position is normal)</td>
<td>7</td>
</tr>
<tr>
<td>perineal trauma rates?</td>
<td>Improve staff education and supervision</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Antenatal perineal massage (with oil)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Upgrade facility</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Improve woman’s education about birthing</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Perineal massage/lubricant in labour</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Implement evidence-based practice re episiotomy rates</td>
<td>1</td>
</tr>
</tbody>
</table>

Analysis of the interview data revealed that the busy medicalised environment of the ward was perceived to be one of the main factors that contributed to difficulty in changing practice. More women give birth each day in KL hospital prompting the category ‘staff rushing and busy’ to be put forward as a reason for genital tract trauma, as the participants identified that they didn’t have time to spend with the women (Birth Statistic, 2012). When labour and birth was ‘speeded up’, the ‘busyness’ and ‘rushing’ around got worse. Staff tended to follow the doctor’s instruction to speed up the birth even in cases of normal labour for low risk women:
‘for low risk women if the progress is slow, normally the doctor will order low dose of Pitocin to expedite the process of birth, and we have to comply’ (Interview-D).

KL Maternity Hospital is a tertiary referral government teaching hospital. Therefore, staff ‘come and go’, so there is a lack of a stable workforce. There are also many students from various categories. As students need to learn and practice, procedures such as episiotomies are common, despite the lack of evidence of a need for their use.

Another category was staff resistance to change. Participants frequently commented when discussing any evidence-based strategy to support perineal integrity that it was ‘not our culture’ to do the practice that was being discussed, and participants insisted that the recumbent position was unquestionably the normal birth position. Staff were comfortable with what was currently being done, and they found it difficult to accept any change.

All the participants in the interviews agreed that in order to reduce the rates of perineal trauma, staff needed to be educated and supervised in their practice:

‘Nurses and midwives should upgrade their current knowledge in order to improve practice. They must attend and involve themselves in any workshop conducted by the hospital and get as much information and develop as many skills as they can related to overcoming perineal trauma’ (Interview-A).
Antenatal and second stage labour perineal massage were emphasised by staff as a means of avoiding tearing during birth. They believed massage makes the perineum soft and able to stretch slowly as the baby is born. Apart from that strategy, participants agreed that the birthing room should be extended and modified. The participants also identified that women needed education during the antenatal period on how to avoid perineal tears, or at least, on how to be ready for the birthing process. The staff also agreed that evidence-based practice should be applied in the clinical setting so that episiotomies could be avoided.

**Discussion**

Senior staff believed that pelvic floor trauma rates could be reduced with better staff training and supervision. Some believed that perineal trauma can be prevented by antenatal perineal massage. Some believe that perineal massage in labour prevents perineal trauma but there is evidence which suggests this is not the case (Geranmayeh et al., 2012; Stamp, Kruzins, & Crowther, 2001b). Senior staff support the implementation of evidence-based practice and an upgrade to the labour ward environment (Villar et al., 2002; Walsh & Gutteridge, 2011) 2011). According to data from individual interviews with senior staff, the reasons why labour ward staff had not changed their practice were that: many staff were resistant to change, they only had basic midwifery training and no education in research methods.
Consequently they did not understand or value research and had no training in finding evidence on which to base their practice. Senior staff believed midwives need to know about research if they are to improve their practice based on evidence (Munten, Cox, Garretsen, & Bongers, 2010; Walsh, 2012). Further, senior staff recognised that the labour ward is highly medicalised and busy, with a high student turnover making any change difficult to implement and maintain.

**Labour Ward Observation**

In this section the data is interpreted through my understanding of Birth Territory Theory (BTT) which was described in Chapter 2.

In summary, BTT distinguishes between a birth sanctum and a surveillance room. Birth Territory Theory postulates that when a woman labours and gives birth in a warm, dim, quiet and private environment with a known and trusted caregiver, she feels safe and her reproductive physiology is optimised (Fahy et al., 2011). When a woman feels safe and loved she is most likely to experience a genius birth; that is, one where she feels good about herself. This is also the same kind of birth that is most likely to be physiologically ‘normal’, and to have the lowest rates of perineal trauma (Fahy et al., 2011).

In this section I first describe and interpret my observations of the environment and of midwife's communication. There are a number of images which show some of what I am describing here (see Appendix P).
I made direct observations of what the staff call the ‘labour ward’. The term ‘labour ward’ is fear-inducing as the focus is on labour and this invokes ideas of pain; what women want to focus on is birth – thus a preferred title would be ‘birth suite’.

**Entering the Labour Ward**

Above the entrance of the labour ward is a sign that reads ‘Obstetric Intensive Care Unit’ (Image P.1). Calling a labour ward an intensive care unit is fear-inducing for women and their families and sets a medicalised tone for the whole childbirth experience. This fear-inducing terminology primes women to accept what will become an experience of a surveillance room for labour and birth. All the lights are on in the birth suite and in each room, making the environment very bright. Standing fans are used to achieve ventilation as the air conditioning is ineffective. Often women feel very hot and sweaty and resort to the use of paper fans.

On entry through the labour ward doors, one finds oneself in the middle of a long corridor. The first room on the left is a staff toilet and the first door on the right is the doctors’ lounge and meeting room (specifically for doctors). There is a smaller room for doctors to sleep in when they are on call. The nursing desk is next on the right and faces across the corridor to a birth room (Image P.2). Several guidelines for obstetric intervention are pasted on the labour rooms wall, including the right dosage for augmentation, shoulder dystocia management, medication protocols and post-partum haemorrhages. Other charts describe how to do hand washing, what to do if there is a needle stick injury and how to position a baby for breastfeeding (Image P.8).
The organisation and control of these spaces suggests the way the medical hierarchy controls this labour ward.

The 20 labour rooms are entered from this corridor (10 on each side) (Image P.3). In the middle of the corridor there is an alcove for neonatal resuscitation which is fully visible to any person in the corridor (Images P.4). Four neonatal resuscitation trolleys can be clearly seen by anyone walking down the corridor; sometimes women and their partners witness resuscitation on their way to their designated labour room. In another alcove in the corridor, extra labour ward beds are on view; these beds are rarely used but I was told by a midwifery manager that they are used by labouring or birthing women if all the labour rooms are full (Image P.5). The labour room described here is a surveillance environment which optimises the ease and comfort of the staff (Fahy et al., 2011) but not of the birthing women.

**The labour room**

There are two doors to each labour room; one door is never closed. The closed door has a glass window which is covered with paper. The open door faces directly to the bed, meaning that anyone in the corridor can see the woman in the bed (Image P.6). In Birth Territory Theory, the provision of a door that can close is needed to meet the woman’s need for privacy and safety (Fahy et al., 2011). Once inside the room, there is a curtain which can obstruct the view from the corridor if it is closed. Practice about maintaining women’s privacy was variable; I saw a number of births whilst I was walking in the corridor. Each labour room is very small and fits just the bed, one chair, a baby cot and a CTG machine. There is piped oxygen and nitrous oxide on the wall.
Boxes of gloves and an oxygen monitoring set are placed near the window. The birthing bed is in the middle of the room. This means that women have no option but to be on the bed and their husbands have to sit on the chair. Each room has a sink and clinical trolley with the equipment necessary to conduct a birth (see Image P.7 and Image P.8).

My Observation on Communication

I conducted direct observation on communication between midwife and birthing woman, midwife and midwife, and midwife and doctors. When entering the labour ward, birthing women are instructed by the nurse-midwife to put on hospital attire and lie on the bed. At this stage few or no pleasantries are exchanged and little or no information is given about the labour ward and what to expect. Thus women are likely to feel uncertain at best and frightened at worst. I found there was little communication between women and midwives during the process of admission and clinical examination. I noticed, midwives documented all the findings without discussing them with the birthing woman. The women showed no interest in knowing the clinical findings either, perhaps because Malaysian culture discourages people from questioning those in authority, in this case nurse-midwives. Birthing women are advised to stay on the bed in a supine or lateral position. Instead of using a 'doppler' to listen to the fetal heart rate intermittently, midwives generally used a CTG machine continuously. This was uncomfortable for birthing women and stopped their movements during labour. Nurse-midwives justified this practice however, because they were regularly assigned to care for two or three labouring women simultaneously.
Birthing women were not generally allowed to eat and drink. Women were told that they could proceed with a caesarean section, and the risk is from LSCS complication if the stomach is full. In certain cases, however, I saw a woman was given sips of water or a wet tissue to their lips. Broadly speaking, the behaviour I observed was more consistent with midwifery domination than midwifery guardianship (Fahy et al., 2011).

My next observation concerned my communication with the midwives. I found that most of the midwives were not interested in discussing research topics as they did not understand what research is. None of the conversations during my observation of midwives involved them showing any interest in talking about ways to reduce the incidence of perineal trauma. There was no argument about what was written by the doctor. If midwives needed clarification about the care of birthing women, they consulted senior midwives before talking to the doctor. Communication between the nurse-midwives and doctors happened only if there were doubts about care or if the doctor needed a gentle reminder about conducting the routine four-hourly vaginal examinations. I observed that the process of communication in the labour ward predominantly involved the nurse manager telling the nurse-midwives what to do or when students needed information from the nurse-midwives. There was little communication between the midwives and birthing women.
Discussion

The labour room described above is a surveillance environment which optimises the ease and comfort of the staff (Fahy et al., 2011) but not of the birthing women. The entrance of the labour ward needs improvement because it is unwelcoming, even frightening. The name of the labour ward needs to be changed. The furniture and medical equipment needs to be re-arranged as the current arrangement could make a woman feel scared and anxious. In addition, as mentioned above, the labour room doors are never closed, giving no privacy at all, and I believe this makes women feel vulnerable. In Birth Territory Theory, the provision of a door that can close meets the women’s need for privacy and safety (Fahy et al., 2011). When women feel unsafe, they feel fear; this causes the sympathetic nervous system to produce adrenalin, which disrupts the secretion of oxytocin with negative consequences for birth physiology (Foureur, 2008). Oxytocin, on the other hand, promotes optimal physiological functioning; women relax, are calm and labour contractions are enhanced – all of which is more likely to lead to normal birth (Fahy et al., 2011).
Clinical Protocols and Guidelines for the Obstetrics & Gynaecology Services

In general clinical guidelines are defined as a ‘systematically developed, evidence-based set of statements to assist practitioners and patient decisions about appropriate healthcare in specific clinical circumstances’ (Field & Lohr, 1990, p. 3). I reviewed the Hospital Clinical Protocols and Guidelines for the Obstetric and Gynaecological Services (hereafter called clinical guidelines) (Appendix Q). Nurse-midwives are not mentioned and have no guidelines of their own; they are assumed to fit under medicine and to follow medical protocols without questioning. The foreword to the clinical guidelines (written in 2008) indicates that the guidelines are designed to govern medical decision-making and routine practice. The foreword also claims that the guidelines are evidence-based. There are, however, a number of routine practices in these guidelines that are not evidence based or go counter to evidence. Examples are given in Table 5.4 below.
<table>
<thead>
<tr>
<th>Labour and birth procedure</th>
<th>Routine in KL Hospital</th>
<th>Evidence-base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Episiotomy</td>
<td>For primigravida or woman with a long perineum</td>
<td>(Carroli &amp; Mignini, 2009)</td>
</tr>
</tbody>
</table>
| Routine CTG                 | A CTG is attached to every woman on admission  
<p>|                             | Short strip of CTG once in every 4 hours or more frequent as indicated (p.11) | (Alfirevic, Devane, &amp; Gyte, 2006) |
| Routine IV cannulation      | IV line to be set up in cases where PPH is anticipated e.g. grandmultipara &gt; p5 (p16) | (Coco &amp; Derksen-Schrock, 2010) |
| Not allowed to eat or drink | Generally restrict intake except for moderate sips of water to avoid the risk of aspiration should GA become necessary p.16) | (Singata, Tranmer, &amp; Gyte, 2010) |
| Not allowed out of bed/     | All women in labour should be nursed in bed either right or lateral position except when taking FHR (p.10). | (Makuch MY, 2010) |
| Supine position             | Supine position on the second stage of labour and while pushing | (Gupta et al., 2012) |</p>
<table>
<thead>
<tr>
<th>ARM</th>
<th>Amniotomy to be done in all patients – establish labour, gestation above 36 weeks and cervix 3cm dilated and head well applied (p.11)</th>
<th>(Smyth &amp; Markham, 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitocin augmentation</td>
<td>If labour still has not been established using the higher concentration of oxytocin; primigravida to infuse oxytocin at a higher concentration (p.23)</td>
<td>(Mozurkewich, Chilimigras, Koepke, Keeton, &amp; King, 2009)</td>
</tr>
</tbody>
</table>

**Discussion**

The gap between evidence-based practice and the practices recommended in the Clinical Guidelines is wide and needs to be addressed as part of this study. This gap is one of the key concerns that should be dealt with in PAR cycle 2 if at all possible.
Review of Birth Statistics

Birth statistics, including total number of births, episiotomy rates and perineal trauma rates for the years 2010 and 2011 are shown in Table 5.5 below.

**Table 5.5  Statistics of Perineal Trauma 2010 and 2011**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total of birth</th>
<th>Episiotomy</th>
<th>1st degree</th>
<th>2nd degree</th>
<th>3rd &amp; 4th degree</th>
<th>Others*</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>11,916</td>
<td>3016 (25%)</td>
<td>1561 (13%)</td>
<td>1943 (16.3%)</td>
<td>12 (0.2%)</td>
<td>198 (1.7%)</td>
<td>56.5</td>
</tr>
<tr>
<td>2011</td>
<td>12,660</td>
<td>3292 (26%)</td>
<td>1514 (12%)</td>
<td>2322 (18.3%)</td>
<td>12 (0.1%)</td>
<td>134 (1.1%)</td>
<td>57.5</td>
</tr>
</tbody>
</table>

*Clitoral tear, vaginal tear and labial tear

(Birth Statistic, 2012)

The statistics show that there was an increase of 1.5% in cases of total number of perineal trauma from 2010 to 2011, a figure that would not be statistically significant. Episiotomies and second degree perineal tear cases increased between 2010 and 2011. I was not able to obtain the data of whether the perineal trauma was sustained by multiparas or primiparas, statistics that would have been useful for this project. The conclusion drawn from these statistics is that the incidence of perineal trauma overall is better than found in the Australian cohort of childbearing women. The overall percentage of episiotomy experienced by childbearing women at KL hospital is lower than the Ministry of Health Malaysia’s target rate of less than 30%. There is generally a low rate of third and fourth degree tears at KL hospital, but there is a possibility that the true incidence may not be identified.
Learning Needs Survey

Informed by the literature review and the results of the individual interviews, I designed a learning needs survey for labour room staff. The survey was reviewed by members of the PAR group to ensure that it was appropriate for the staff we intended to survey. A total of 68 registered nurse-midwifery staff completed and returned the survey for a response rate of 61%. The majority of the respondents were aged between 31 and 40 with only six respondents aged over 50.

The overall results of the survey can be seen in Table 5.6.

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Total answered</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Total agree</th>
<th>Total Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The environment of the room has NO effect on the woman’s labour</td>
<td>85</td>
<td>20 23.5%</td>
<td>34 40%</td>
<td>26 30.5%</td>
<td>5 6%</td>
<td>31 36.5%</td>
<td>54 63.5%</td>
</tr>
<tr>
<td>2.</td>
<td>Make ALL women wear hospital clothes</td>
<td>87</td>
<td>5 5.7%</td>
<td>2 2.3%</td>
<td>53 61%</td>
<td>27 31%</td>
<td>80 91.9%</td>
<td>7 8.1%</td>
</tr>
<tr>
<td>3.</td>
<td>Keep ALL women lying on the bed throughout labour</td>
<td>87</td>
<td>4 4.6%</td>
<td>33 38%</td>
<td>41 47.1%</td>
<td>9 10.3%</td>
<td>50 57.5%</td>
<td>37 42.5%</td>
</tr>
<tr>
<td>4.</td>
<td>Prevent ALL women from drinking clear fluids as desired in labour</td>
<td>86</td>
<td>13 15.1%</td>
<td>34 39.5%</td>
<td>35 40.7%</td>
<td>4 4.7%</td>
<td>39 45.3%</td>
<td>47 54.7%</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Table</td>
<td>13%</td>
<td>32%</td>
<td>37%</td>
<td>5%</td>
<td>42%</td>
<td>45%</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>4</td>
<td>Encourage ALL women to birth (deliver) in supine position</td>
<td>87</td>
<td>15%</td>
<td>36.8%</td>
<td>42.5%</td>
<td>5.7%</td>
<td>48.3%</td>
<td>51.7%</td>
</tr>
<tr>
<td>5</td>
<td>Maintain continuous CTG on ALL women, even if normal</td>
<td>86</td>
<td>14%</td>
<td>31.4%</td>
<td>45.3%</td>
<td>9.3%</td>
<td>54.7%</td>
<td>45.3%</td>
</tr>
<tr>
<td>6</td>
<td>Direct ALL women how and when to push in labour</td>
<td>87</td>
<td>3.5%</td>
<td>5.7%</td>
<td>46%</td>
<td>44.8%</td>
<td>90.8%</td>
<td>9.2%</td>
</tr>
<tr>
<td>7</td>
<td>Cut an episiotomy to prevent perineal tearing</td>
<td>87</td>
<td>4.6%</td>
<td>18.4%</td>
<td>62%</td>
<td>15%</td>
<td>77%</td>
<td>23%</td>
</tr>
</tbody>
</table>

**Reflection and Evaluation**

This section brings together the findings from the smaller sub-studies discussed above and draws conclusions which will guide how PAR cycle 2 will be conducted.

The results of *observations* within the labour ward demonstrate that the birth room at the hospital is best described as a surveillance room. Much needs to change in the layout and furnishing of the environment so that women can feel unobserved and relaxed. Midwives are unaware of the importance of an optimal environment for birth in order to achieve optimal outcomes. The role of the midwife in the labour room is more consistent with *midwifery domination than midwifery guardianship*. I recognised that it was not in the scope of this study to influence the design of the labour ward but I could aim to improve the practice of the midwives.
Importantly, the practice of midwives was controlled by unquestioning adherence to the Clinical Practice Guidelines for the Management of Labour, which, as shown above, had important elements that were not-evidence-based.

The findings from the *focus groups* demonstrated that nurse-midwives believe the causes of preventable perineal trauma lie almost entirely in the faulty anatomy of women and/or their babies or with the woman failing to follow the midwife’s ‘instructions’. Where the participants said that the clinician contributed to perineal trauma, it was because they could not gain the cooperation of the woman or because they were not guarding the perineum during the emergence of the baby’s head. All of these beliefs, with the exception of those to do with woman/midwife collaboration, have no basis in evidence and are therefore not justified”.

The findings from *individual interviews* with the senior managers and directors of obstetrics and nursing showed that they shared many of the non-evidence based beliefs of the nurse-midwives in the focus groups. While they shared many non-evidence false beliefs with the nurse-midwives, the senior staff believed that pelvic floor trauma rates could be reduced with i) better staff training and supervision, ii) the implementation of evidence-based practice and iii) an upgrade to the labour ward. They believed that the reason perineal trauma rates were so high was that many staff were resistant to change and did not understand or value research. They agreed that midwives need to learn about evidence-based practice. These senior staff believed that making any change in labour ward practice would be very difficult because the labour ward was highly medicalised and very busy with high nursing and medical student turnover.
The findings from the *staff learning needs survey* demonstrate that the majority of the respondents believed that they should direct women on how to push during second stage labour and perform an episiotomy to prevent perineal tearing. There was a high level of support for other practices which are known to reduce the incidence of active, physiological birth. The reduced incidence of active, physiological birth is related to increased rates of perineal trauma (Downe, 2012). The learning needs survey indicated both a lack of knowledge of evidence-based practice and a lack of knowledge about active birthing practices that minimise perineal trauma. These two major topics formed the foundation of the educational strategy which became the intervention in this study.

The review of *birth statistics* showed that at 26%, the episiotomy rate is very high compared with New South Wales, Australian figures which are closer to 12%; overall, the perineal trauma rate was similar. The number of third and fourth degree tears in the Malaysian hospital is low compared to Australia but this could be due to under-diagnosis. In Australia, third degree tears are now much more carefully diagnosed than they were in the past. Even if a few fibres of the anal sphincter are torn, this damage is now classed as 3a degree tear; the other classifications are 3b and 3c as described in Chapters Two and Three of this dissertation (Australian Council on Healthcare Standards, 2012). Thus, improved diagnosis has been a major contributor to the apparent rise in the rate of third degree tears since the new categories were introduced.

Reflecting upon the findings of all data collection and upon my own experiences in Cycle 1, the key conclusions are organised in Table 5.7 below as barriers and enablers of practice change to optimise perineal outcomes.
### Table 5.7  Barriers and Enablers of Practice Change

#### BARRIERS

<table>
<thead>
<tr>
<th>Birth environment</th>
<th>The design of the labour ward inhibits active birthing practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Guidelines</td>
<td>The clinical guidelines for labour and birth care are highly medicalised and non-evidence based; undermining active birthing practices</td>
</tr>
<tr>
<td>Staff Issues</td>
<td>Staff lack knowledge of, or access to, evidence based practice information</td>
</tr>
<tr>
<td></td>
<td>Staff lack of knowledge and experience with active birthing</td>
</tr>
<tr>
<td></td>
<td>The culture of the hospital and the birth suite is strongly medicalised, making it likely that changes will be resisted at the local level</td>
</tr>
<tr>
<td></td>
<td>The level of staffing is too low to allow for one-to-one care in active labour which undermines active birthing practice</td>
</tr>
</tbody>
</table>

#### ENABLERS

<table>
<thead>
<tr>
<th>PAR Group</th>
<th>The PAR group was comprised of nurse/midwifery managers as they are the key enablers or blockers to any change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researcher Characteristics</td>
<td>I was a Malaysian midwife who was perceived to be well qualified. Bringing evidence for practice change was crucial to success</td>
</tr>
<tr>
<td>Internal Support</td>
<td>I had the support of the senior managers within the organisation</td>
</tr>
<tr>
<td>External Support</td>
<td>I was well supported by my Australian midwife-supervisor and this enhanced my credibility</td>
</tr>
</tbody>
</table>

The above barriers and enablers for change were the basis for the beginning of Cycle 2 which is described next.
PAR Cycle 2: Activities and Findings

The activities and findings for PAR Cycle 2 are presented under the headings Assess and Re-Plan, Act and Observe and Reflect and Evaluate. The discussion and conclusions drawn from these activities and findings can be found in Chapter 6.

At the end of PAR Cycle 1, I identified the key barriers and enablers for practice change (Table 5.7 above); which formed the basis for entering PAR Cycle 2. My aim was to further strengthen the Enabling Factors whilst directly addressing the barriers to changing labour and birth practice, specifically Staff Education and The Clinical Practice Guidelines. There are two barriers that I felt were beyond the scope of this project and the authority of the PAR group. These are: 1) the poor design and overcrowding of the labour ward and 2) problems with skill mix and inadequate staffing numbers to provide one to one care in labour.

Assess and Re-plan

Cycle 2 began by working with the PAR group to review the baseline data (see Tables 5.2, 5.3 and 5.6 above). The strategy that had the most support within the PAR group, and which also had the support of senior managers, was to begin by teaching evidence-based practice (EBP) as a general concept. As staff had no exposure to or foundation in evidence-based practice, the managers thought that awareness and understanding of the concept would motivate staff to be open to changing practice to optimise perineal outcomes. The 12 PAR group meetings were compiled and analysed using thematic analysis (Appendix R) to identify strategies for staff development and practice change, including mentoring, staff training and knowledge dissemination, and revising the clinical practice guidelines.
Plan for Staff Education

We planned to educate at least 70% (77/110 staff) of the labour ward staff about EBP. The news of a supervision visit by my supervisor to KL Maternity Hospital made the group excited. The PAR group were informed that Professor Fahy would deliver the first session of a planned one-day workshop and that her topic would be “Evidence-Based Practice”. I facilitated a meeting of PAR group members in which they learnt about the best evidence to minimise perineal trauma. In the PAR group meetings, research articles and learning materials were distributed and discussed. Then, the PAR group members agreed to educate the nursing and midwifery staff. The topics that we agreed were most important to teach are included in Appendix H. In the third PAR group meeting, previously organised pairs of PAR group members rehearsed their presentations and received evaluative feedback from the group. In this way, the PAR group members became knowledgeable and confident, which helped them to become champions of change.

Plan for Revising Clinical Practice Guidelines

I discussed the Clinical Guidelines with the PAR group and provided them with research articles which showed there were important elements of the Guidelines that were not evidence-based. We agreed that changing the Guidelines was desirable and we also knew that we would need the head of department’s support for any change to the Guidelines he had previously authorised. I decided to take action on this matter (Table 5.8 below).
Act and Observe

The actions of the PAR group during Cycle 2 are presented in Table 5.8, which demonstrates the high degree of engagement and activity of the PAR group.

Table 5.8 PAR Cycle 2 Activities

<table>
<thead>
<tr>
<th>Year 2011/2012</th>
<th>Activity</th>
<th>Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>1st staff training and workshop</td>
<td>5th PAR group meeting</td>
</tr>
<tr>
<td>November</td>
<td>Draft practice guidelines</td>
<td>6th PAR group meeting</td>
</tr>
<tr>
<td></td>
<td>A series of educational talks to staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poster EBP and perineal outcomes display</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Visit Health Promotion Unit Ministry of Health Malaysia</td>
<td>7th PAR group meeting</td>
</tr>
<tr>
<td>December</td>
<td>2nd staff training (Seminar Day)</td>
<td>9th PAR group meeting</td>
</tr>
<tr>
<td></td>
<td>Practice guideline proposal</td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>Mini booklet of Practice Guideline circulated</td>
<td>10th PAR group meeting</td>
</tr>
<tr>
<td></td>
<td>Focus group (Post-intervention)</td>
<td>11th PAR group meeting</td>
</tr>
<tr>
<td>February</td>
<td>Closing the PAR Group</td>
<td>12th PAR group meeting</td>
</tr>
<tr>
<td></td>
<td>Research Evaluation</td>
<td></td>
</tr>
</tbody>
</table>
Staff Education Activities

The main strategies for staff development were: mentoring, staff training and knowledge dissemination. Following the literature review (reported in Chapter 3), I designed a poster (Figure 5.2) showing the EBP that aimed to improve perineal outcomes. I wanted the poster to be simple, easy and quick to read and colourful so that it captured people’s attention. I was given permission by the nurse manager to place the poster in the labour ward.

Figure 5.2 Poster Improving Perineal Outcomes
Generally, this poster functioned well in highlighting several practices that staff needed to know can provide benefits and no disadvantages to women or their babies. The poster was effective in gaining attention; virtually every staff member (nurse-midwives, doctors and students) looked at it when they passed. This small A4 poster promoted discussion, particularly about the risks associated with episiotomy, which was a common procedure in the labour ward. Some staff (nurse-midwives) shared their own personal bad experiences of complications from episiotomies during childbirth. I overheard many discussions about the poster and nurse managers told me the poster was often a topic of discussion whenever nurse-midwives got together. Common positive comments revealed that most nurse-midwives did not know the meaning of the term ‘evidence-based practice’ but they understood that some of the practices needed to change according to the information on the poster. The PAR group members helped the nurse-midwives to update their knowledge by providing relevant articles and by discussing with them the benefits of changing practice.

Common negative comments included that some practices on the poster are theoretically easy to follow but difficult were to implement in this particular hospital. Nurse-midwives explained that the labour room beds were small. There was no adequate space in the labour room for women to move around or to adopt different positions other than supine or upright on the bed. They indicated that because KL Maternity Hospital is a government hospital and not a private hospital, women are unable to receive first class care. From these comments I concluded that the nurse-midwives needed to be empowered with more knowledge and motivated by PAR group members to be interested in changing traditional practices. All these comments motivated me to design an appropriate educational session with the PAR group.
Provision of Learning Materials

A folder containing relevant articles was shared with all nurse-midwives, doctors and students who worked in the labour ward. The articles included a summary of the evidence of factors affecting perineal outcomes and a variety of articles concerning evidence-based practice (Appendix G and H).

Didactic Teaching

Two seminar days were planned and conducted. Kathleen Fahy was directly involved twice in Cycle 2. She contributed to the first seminar day, which was conducted in October 2011, and to a second seminar day/workshop in December 2011. PAR group members also conducted a series of educational sessions in the labour ward. Kathleen Fahy’s presence, as an Australian professor, researcher and well published author, added strength to the project; all the PAR group members felt more empowered because of her involvement and support (see images in Figure 5.3 below). During her visits she also met with the Director of Nursing and they formed a warm relationship over a number of days. Professor Fahy also met the head of O&G Department, in my company.
The First Seminar

The first half-day seminar was conducted in October 2011 with a total of 47 nurse-midwives, including PAR group members and participants. The main topics were evidence-based practice and risk factors of perineal trauma. A clinical lab-based active-birthing workshop was also conducted. Professor Fahy presented a paper on ‘The role of midwifery in implementation of evidence-based practice'. This was the first educational programme delivered by an Australian researcher to the group of nurse-midwives at KL Maternity Hospital. Thus, this group of nurse-midwives were exposed to global midwifery practice and information about the role of midwives across the world. From the oral feedback at the end of the workshop, most participants felt very happy and were really interested in the presentation; they had never had an opportunity like this before.
The participants were given research articles, including articles on EPB as a handout; the poster of risk factors for perineal trauma was on display. Professor Fahy kindly donated some midwifery-related books to the nurse-midwives to be used for references. The nursing director keeps the books in her office for the staff to borrow. The first staff training session ended with a visit to the labour ward where Professor Fahy and I demonstrated some alternative birthing positions to the nurse-midwives.

The Second Seminar

The second seminar, held in November, 2011, was a whole day educational programme for 57 participants at KL Maternity Hospital. The participants included nurse-midwives, doctors, students and the PAR group members. The head of Obstetrics and Gynaecology launched the opening ceremony. He said he was delighted to support this program to assist staff to gain knowledge for women’s benefit. The programme was divided into two sessions. In the morning, a series of presentations was followed by question and answer discussions; all these presentations were on the topics of evidence-based practice to promote normal birth and optimise perineal outcomes. Professor Fahy presented a session on the use of evidence-based practice to promote normal birth and emphasised that evidence-based care is routine midwifery practice in Australia. The PAR group also taught sessions and used a quiz, word puzzles and simple tests to actively engage the 57 nurse-midwives, doctors and students.
In the afternoon, Professor Fahy and the PAR midwives conducted hands-on activities, including demonstrations of a variety of maternal birthing positions, simulated birthing, antenatal perineal massage and preparing a home-like environment for birthing women. Participants’ pre- and post-seminar self-evaluation is presented in Table 5.9 below. The seminar ended with a PAR group meeting which included Professor Fahy.

**Participants’ Self-Evaluation**

<table>
<thead>
<tr>
<th>Evaluation Scale</th>
<th>Total</th>
<th>Pre-seminar</th>
<th>Post-seminar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Poor Fair</td>
<td>Good</td>
</tr>
<tr>
<td>Knowledge EBP re Perineal Trauma</td>
<td>57</td>
<td>16 29 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>28% 50% 21%</td>
<td></td>
</tr>
<tr>
<td>Effect of the Birth Environment on Perineal Outcomes</td>
<td>57</td>
<td>10 27 20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>17% 47% 35%</td>
<td></td>
</tr>
<tr>
<td>Expertise to Protect the Perineum</td>
<td>57</td>
<td>8 32 17</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14% 56% 30%</td>
<td></td>
</tr>
<tr>
<td>Willingness to spread the message to other staff</td>
<td>57</td>
<td>10 37 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>17% 65% 17%</td>
<td></td>
</tr>
</tbody>
</table>

In summary, all participants said that they experienced a big increase in knowledge regarding both the factors affecting perineal trauma and the impact of the birth environment. Participants also expressed enthusiasm for spreading the word to other staff about ways to optimise perineal outcomes.
Clinical Practice Guidelines

One of the key changes that occurred in Cycle 2 was the development and approval of new clinical practice guidelines for nurses and midwives (Appendix Y). On Professor Fahy’s second visit to the research site, we discussed the importance of updating the Clinical Practice Guidelines to bring them up to current best evidence standards. Professor Fahy and I wrote the first draft of the new clinical practice guidelines to take to the PAR Group. The PAR Group and I then extensively reviewed and revised the draft guidelines at each meeting within PAR Cycle 2. We sought and gained approval of the guidelines from the head of the O&G Department. Ten copies of the approved Clinical Practice Guidelines were distributed by the PAR group to the labour ward. The PAR group members reported that the nurses and midwives in the labour ward were pleased that the evidence-based guidelines had been developed by midwives. The nurse-midwives were also happy that the guidelines helped them to improve perineal outcomes for women. Before my project finished, all nurses and midwives in the labour ward were given a copy of the new Clinical Practice Guidelines to read and keep. Student midwives started practising in accordance with the Guidelines.

Some extracts from the new Clinical Practice Guidelines for Nurses and Midwives are presented below in Table 5.10 and the complete Guidelines are included as Appendix Y.
Table 5.10  Recommendation in new Clinical Practice Guidelines

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal birth environment</td>
<td>The ideal environment for birth is dim and warm so that the woman can move into this meditative state between contractions. Make sure the woman has adequate blankets and pillows (p.7)</td>
</tr>
<tr>
<td>Midwifery Guardianship</td>
<td>The ideal labour ward midwife is calm, confident, positive, warm, caring and sensitive. She is well educated about labour and birth anatomy and physiology and has good clinical assessment and reasoning skills. She forms good relationships with her co-workers and communicates clearly and confidently when talking to doctors about the women in her care (p.7)</td>
</tr>
<tr>
<td>Birthing Position</td>
<td>Encourage frequent position changes in bed and getting out of bed (p.8) Upright pushing positions are the most effective because gravity is assisting the woman and baby. In second stage, in particular, the aim is to be active; to keep moving (p.10) Support the woman to adopt the birth position which feels right for her. Upright or semi-upright is best for primipara and left lateral is best for preventing precipitous birth for a multiparous woman (p.12)</td>
</tr>
<tr>
<td>Pushing Technique</td>
<td>Avoid pushing, massaging or poking the perineum (no chinning, no perineal massage and stretching of the perineum or vagina as this may damage the stretched muscle fibres leading to perineal trauma) (p.12) Unnecessarily touching the woman’s introitus is invasive and may cause emotional and psychological distress.</td>
</tr>
<tr>
<td>Episiotomy</td>
<td>There should be NO episiotomy scissors on a normal birth pack. If the midwife needs the scissors there MUST be an indication e.g. fetal distress and then she should call for them to be brought to her. Episiotomy increases the risk of 3rd and 4th degree tear (p.12)</td>
</tr>
<tr>
<td>Food and drinks</td>
<td>Place a jug of water or cordial beside the woman with a glass and encourage her to maintain hydration and blood sugar levels. Some women prefer to drink an energy drink (p.8)</td>
</tr>
<tr>
<td>Artificial of Rupture Membrane (ARM)</td>
<td>Women who are assessed as ‘low risk’ should proceed on a pathway towards normal birth under the care of midwives. Do NOT perform an ARM the membranes should rupture spontaneously (p.6)</td>
</tr>
</tbody>
</table>
Review of Birth Statistics

The perineal outcome statistics for 2010, 2011 and 2012 were compared and reviewed (see Table 5.11 below for details).

Table 5.11 Statistics of Perineal Trauma 2010, 2011 & 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Total of birth</th>
<th>Episiotomy</th>
<th>1st degree</th>
<th>2nd degree</th>
<th>3rd &amp; 4th degree</th>
<th>Others*</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>11,916</td>
<td>3016 (25%)</td>
<td>1561 (13%)</td>
<td>1943 (16.3%)</td>
<td>12 (0.2%)</td>
<td>198 (1.7%)</td>
<td>56.5</td>
</tr>
<tr>
<td>2011</td>
<td>12,660</td>
<td>3292 (26%)</td>
<td>1514 (12%)</td>
<td>2322 (18.3%)</td>
<td>12 (0.1%)</td>
<td>134 (1.1%)</td>
<td>57.5</td>
</tr>
<tr>
<td>2012</td>
<td>12,463</td>
<td>2587 (21%)</td>
<td>950 (7.6%)</td>
<td>2858 (23%)</td>
<td>9 (0.07%)</td>
<td>359 (2.9%)</td>
<td>53.45</td>
</tr>
</tbody>
</table>

The episiotomy rate declined by 4% following the study without any increase in the rate of severe perineal trauma and with a 0.03% decrease in the rate of perineal trauma overall. The PAR activities were completed in 2011. Thus the change in the percentage of episiotomies performed in 2012 (20.8%), compared with 2010 (25%), is evidence in support of the claim that the PAR activities did bring about a change in the practice of performing episiotomies. The number of first degree tears fell whilst the number of second degree tears increased in 2012. The increased rate of second degree tears is probably due to the reduction in the number of episiotomies in 2012.
The increase in second degree tears and the reduction in first degree tears may also be a result of improved assessment following the education program. The rate of third and fourth degree tears has also reduced which is not surprising given the known association between episiotomies and third and fourth degree tears.

Focus Group Evaluation

Separate post-intervention focus group meetings were held with nurse-midwives and the PAR group members to identify the factors that had changed as a result of this project (Table 5.12).

Table 5.12 Content Analysis for Focus Group (Post intervention)

<table>
<thead>
<tr>
<th>Question 1: What do you think has changed because of this project?</th>
<th>Responses</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women are not put to bed following admission and may sit or stand</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Women are offered water during labour</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>More women push in an upright position</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Adoption of the left lateral position while pushing</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Routine CTG monitoring while in the second stage of labour stopped</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Fewer women are directed to push</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Fewer women have perineal massage during second stage</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>
Fewer episiotomies are being cut 5
Husbands are being guided to give moral support and back massage to women during birth 2

Question 2:

**How are staff adapting to the EBP Guidelines?**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff knowledge is better</td>
<td>10</td>
</tr>
<tr>
<td>Slowly practice is changing but we need to take time to implement</td>
<td>10</td>
</tr>
<tr>
<td>Some practices do not fit with our culture</td>
<td>8</td>
</tr>
<tr>
<td>(e.g. birth positions)</td>
<td></td>
</tr>
<tr>
<td>Difficult to implement at certain times (e.g. many cases and short of staff)</td>
<td>4</td>
</tr>
<tr>
<td>Need more training</td>
<td>2</td>
</tr>
</tbody>
</table>

In summary, the focus group participants identified several key practices that had changed because of the project. These practices include: now offering drinks to women; encouraging upright positions during the second stage of labour; cessation of routine CTG monitoring in second stage; not performing perineal massage and not directing women to push and importantly, not performing episiotomies.
While information about EBP had improved their knowledge, the participants said that more time was needed to put their new knowledge into practice. Others said that they needed more training because it was difficult to incorporate EBP into the way they worked.

**PAR Group Evaluation**

In the last meeting with PAR group members, I distributed an evaluation form for them to write an overall evaluation for this project. Seven members of the PAR group out of the ten were able to respond because two were on leave and one had to go to a special meeting. Their verbatim responses are shown below in Table 5.13.
### Table 5.13 The PAR Group Self-Evaluation

<table>
<thead>
<tr>
<th>Name</th>
<th>Evaluative Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>“This is a good project should be continuously run in Labour ward. The aim is to reduce the episiotomy rate and should be no problem for staff. Continuously Nursing Education is one of the steps to improve staff practice in labour ward so by having knowledge, they more confident. Some staff have not really caught up with this project because their work time-consuming, and many women come to the KL Hospital for birthing”.</td>
</tr>
<tr>
<td>P2</td>
<td>“Staff have started to feel confident not to perform the episiotomy on primips. There was a case that primipara without episiotomy ended up with the intact perineum. It is a good example for staff to follow. Actually, an episiotomy was done by staff member, who did not want to wait. By the way, I found this project gives more confidence to staff about EBP in their daily work”.</td>
</tr>
<tr>
<td>P3</td>
<td>“The project has influenced staff not to do the episiotomy as a routine procedure.</td>
</tr>
<tr>
<td>P4</td>
<td>“We will continue to encourage staff practice evidence based. We have to believe because if we think positive, it will run easily. These changes will be monitored time to time for improvement. For the time being, we will keep continuing on what staff can accept first”.</td>
</tr>
<tr>
<td>P5</td>
<td>“I know from the beginning some staff are not really happy with this project as they assumed this might burden them. However, as this project continued, I noticed there was a change. Episiotomy is now not routine and staff also do not think of doing an episiotomy for a primip. We should continue this project even when the study finishes because of the advantage for women and staff. This is a pioneer project which was conducted by nurses and midwives under a research facilitator. So far, no project like this has ever run at this hospital. We should be proud of our profession”</td>
</tr>
<tr>
<td>P6</td>
<td>“We should start this project in the antenatal period, so that women got knowledge and can work with the staff during the process of labour and birth. Otherwise, it is difficult for the women and the midwives during the birthing process.</td>
</tr>
<tr>
<td>P7</td>
<td>“I felt grateful for this project. I become more knowledgeable about the evidence-based practice and the idea of research. This project has given me a big exposure and awareness of daily practice. Not only, for myself, I believed many staff also benefitted from this project. And I will make sure to keep this project running continuously in the future”</td>
</tr>
</tbody>
</table>
Reflect and Evaluate

Support from management for the whole project was invaluable in enabling the success of this PAR project. The head of department and director of nursing were proud to have Professor Fahy at the seminars; everyone said they were fortunate to have her present. I don’t think the seminars would have run as well as they did without their support. The project itself certainly wouldn’t have been able to be implemented without their support.

The seminars were rated highly by all and participants reported good knowledge gains. The positive feedback is testament to the way in which the planning and management of the seminars were of a high standard. Overall, the seminars and the associated learning materials were important for increasing participant knowledge of evidence-based practice in regards to the care of women in the second stage of labour.

The focus group evaluations involved nurse-midwives and nurse managers and the participants stated that there have been positive changes in the behaviour of the labour ward staff including; encouraging drinking and allowing eating during labour, encouraging upright positions in labour and birth, and the use of the left lateral position for birth.
The *new Clinical Practice Guidelines* were mostly adopted by the labour ward nurse-midwives. The recommendations for the provision of warm pads for the second stage and removal of episiotomy scissors from birth packs have not yet been implemented. There are no facilities in the labour for warming packs so the staff are currently unable to provide them. However labour ward staff are aware that warmth on the perineum is beneficial. I recommended to purchase an electric kettle, have a bowl for the warm water and use a peri pad or a facecloth to warm the woman’s perineal area, however, this not be done yet. There were difficulties negotiating with the sterilising department to have the episiotomy scissors sterilised as a separate item instead of being included in the birth pack. Those negotiations are ongoing.

The *birth statistics* which compare outcomes from 2010, 2011 and 2012 show that this PAR study achieved its stated objective; that is, to reduce the rate of perineal trauma.

*The PAR group members* demonstrated their commitment to the project in their feedback (Table 5.13) and played an integral role in disseminating education material and the new guidelines. The reduced rates of genital tract trauma in 2012 demonstrate that the managers have continued with the project. As they are nurse managers, their leadership and participation in this project was and is essential for the ongoing commitment nurses and midwives to follow the new Clinical Practice Guidelines. Our experience contrasts with recommendations from McCormack (2010) who suggests that the clinicians, not the managers, should be the drivers of change. I will discuss this matter in the concluding chapter.
Summary

This chapter has presented the actions and findings from two cycles of action research to answer the research question: How can midwifery practice be improved to optimise perineal outcomes for birthing women? The chapter presented and discussed six sets of data, both qualitative and quantitative, that described how to change midwifery practice. The changes can be considered at two levels: 1) the organisational and political strategies necessary to bring about positive change and 2) the specific clinical practices that need to be changed to optimise perineal outcomes.

The final chapter will discuss the three key findings of this study: the literature review information about factors that minimise perineal trauma; findings related to practice change; and findings that identify the organisation and practice that contributed to change at the hospital.
CHAPTER SIX

Discussion and Conclusion

This chapter draws upon the whole dissertation to answer the research question; *How can midwifery practice be improved to optimise perineal outcomes for birthing women?*

In this final chapter the main findings will be summarised and discussed in the context of the available literature. Conclusions will be drawn and recommendations for clinical and research practice will be made. There are two main types of findings;

1. Findings from the literature review about factors that minimise perineal trauma
2. Findings related to how to change practice

Taken together, the findings from this study, discussed below, support the thesis that: midwifery practice can be changed to optimise perineal outcomes if a Participatory Action Research approach to change is supported by the relevant managers.
Factors that Minimise Perineal Trauma during Birth

This literature review aimed to identify the factors that lead to perineal trauma during birth. Modifiable and non-modifiable factors associated with perineal trauma at birth were identified but the main focus was on those factors that the midwife and woman can modify. The findings from the literature review are derived from a critical reading of 35 articles; including 15 Cochrane Reviews.

In summary the evidence is that perineal trauma is minimised when the woman has performed antenatal perineal massage and when birth occurs at home or in a home-like environment in a maternity unit. Antenatal perineal massage or the use of the Epi-NO device should be encouraged for nulliparous women in order to protect against tearing. Antenatal perineal preparation has the added advantage in that it not only minimises the risk of tearing, it also teaches women to be more knowledgeable about their bodies in preparation for childbirth (Gupta et al, 2012). As discussed in Chapter 2 under heading Midwifery Guardianship, having a known midwife at birth and being supported self-chosen family and/or friends is important for the woman to feel safe and loved. Feeling safe and loved, in turn, is a precondition for the woman’s autonomic nervous system to be in the parasympathetic mode and thus, reproductive psychophysiology is optimised (Fahy & Hastie, 2008).
During second stage adopting a lateral, non-supine position for the birth of the baby minimises the downward pressure on the perineal body thus minimising trauma (Gupta et al, 2012). Spontaneous pushing, rather than directed pushing, invites the woman to feel and respond to her intrinsic urges, including the sensation that she may be tearing and thus she is able to moderate the pushing and even change positions to change the angle of pressure from the oncoming head (Yildrim & Beji, 2008). Warm packs to the perineum during late second are thought to improve blood flow to the area and relax the muscles of the pelvic floor during stretching, therefore reducing the risk of tearing (Dahlen et al, 2007).

During this study the rate of episiotomy and perineal trauma declined without any increase in the rate of severe perineal trauma. This finding is consistent with the literature which shows that episiotomy is associated with increased rates of perineal trauma, including 3rd and 4th degree tears. Episiotomy, therefore, should only be used when the fetus needs to be born quickly or for those obstetric manoeuvres which require that vaginal opening to be enlarged (Carolli & Magni, 2009). The avoidance of episiotomy, therefore, reduces perineal trauma (Erwin, 2013; Revicky & Nirmal, 2010). Although most practitioners were taught a very ‘hands on’ approach to assisting with the birth of the baby, a ‘hands-off’ assistance with birth is associated with a lower rate of episiotomy. The reduction in trauma is probably due to birth occurring physiologically as a ‘hands on’ approach cannot improve on nature’s ability to birth babies in the best way.
The use of oxytocics, epidurals, forceps and vacuum deliveries, directed pushing and episiotomies all increase the rate and degree of perineal trauma. These factors work synergistically to change physiological birth to pathophysiological birth which in turn changes the directions and forces of birth and/or directly causes trauma. Much obstetrically-led maternity care practice works against maintaining perineal integrity because obstetric interventions in these units are so common. Since the majority of women give birth in hospitals, one way of reducing perineal trauma is to introduce midwife-led caseload models of care and to avoid all but essential medical interventions during labour and birth.

**Factors Related to Practice Change**

It was daunting for me, an outsider at the Kuala Lumpur hospital, to embark on a project aimed at changing the practice of nurses and midwives I did not know, and over whom I had no authority. In reflecting upon the factors that made positive practice change possible, I think the most important ones were:

1) Management Involvement and Support
2) Evidence-Based Clinical Practice Guidelines
3) Focussed Staff Training
Management Involvement and Support

The crucial role that hospital managers’ play in facilitating or blocking practice change has been identified by other PAR researchers in nursing (McCormack et al, 2004). Knowing the importance of gaining their active support, I worked to initiate and maintain relationships with the Director of Nursing and the Director of Obstetrics, I made sure that they both met Professor Fahy on the two occasions that she visited. I was rewarded with their support as evidenced by the way they organised staff seminars and educational program sessions and approved of a new practice guideline to be used in labour ward. Both of these senior leaders attended some parts of both workshops which demonstrated their support in front of the staff. Other researchers have noted that explicit support from senior managers lead staff to be more optimistic and confident about the change that they are part of (McCormack et al, 2004).

I recommend that other PAR researchers seeking to change practice should begin by having a prepared project proposal that is brief and can be easily explained in less than 10 minutes. The right place to start to make change is to establish a relationship of mutual respect with each individual in the management team at the hospital. This is because the management team controls what can and cannot happen in their hospital (Haffer, 1986). Researchers should maintain a good relationship with the managers and keep them well informed on each stage and outcome of the research activities occurring in their hospital. Networking with staff at lower levels and across disciplines should continue throughout the project.
The PAR group members were the backbone for this study; without them no change would have occurred at all. I am very grateful for their time, professionalism, support and hard work. PAR members engaged in distributing learning materials, they conducted some parts of the education sessions and they contributed to the wording of the new guidelines. Importantly, the PAR members, as respected managers in the delivery suite, spoke positively of this research project and led change by their own example and willingness to change.

Our experience contrasts with recommendations from McCormack (2010) who suggested that the clinicians, not the managers, should be the drivers of change. I do not think that a bottom-up approach would have worked in Malaysia. Firstly, the culture in Malaysia is very much a hierarchical one where the designated leaders lead and subordinates follow: never the other way around. The finding from my study is, however, consistent with previous research which claimed that the most effective practice change research was that which had high levels of support and encouragement from management (Hundley et al, 2000). I recommended that, in the future, researchers should include managers when recruiting participants even if that sometimes means having two groups; one for managers and one for clinicians. Two groups may be necessary because a mixed group may inhibit the free exchange of ideas.
Evidence Based Clinical Practice Guidelines

The new, evidence-based Clinical Practice Guidelines for midwives were authorised by the Director of Obstetrics and implemented in labour ward: they have mostly been adopted by the labour ward nurse-midwives. These guidelines are significant because they allow nurse-midwives, for the first time, to care for low risk women independently of medical involvement. This means that midwives can make care decisions with the woman and do not have to follow what used to be standard medical practice guidelines.

Several key practices have changed because of this project. Participants in focus groups identified important changes were occurring in practice because of the new guidelines including; offering drinks to women; encouraging upright positions during the second stage of labour; minimising the routine use of CTG monitoring, ceasing perineal massage in labour and not directing women to push and importantly, not performing episiotomies. Participants reported an improvement in knowledge, not just about factors that cause perineal trauma but also about the broader area of evidence-based practice. Some staff said that they needed more time and training because they found it difficult to incorporate EBP into their work. The members of the PAR group and I believe that the new clinical practice guidelines are of critical importance in empowering midwives to assist women to birth more spontaneously.
**Focussed Staff Training**

Staff education involved two major seminars, the poster of risk factors which was displayed in labour ward and series of educational mini-session in labour ward. The seminars involved sessions delivered by the members of the PAR group; mostly in the local language. Professor Fahy also delivered a couple of sessions in careful English which were well understood. There was plenty of interactivity; particularly with the hands-on labour and birth positions skills labs. The poster was simple and eye catching; much discussion was generated in the labour ward as staff looked at the poster and considered current practice and how it might change. The educational mini-sessions were conducted by PAR group members on the labour ward at change of shift. The combinations of these strategies means that all, or virtually all, labour ward staff members, both medical and nursing/midwifery, were exposed to the educational interventions. Each of these educational strategies were evaluated as effective in promoting staff learning as evidenced by the staff feedback and by the reduced perineal trauma rate. The improvement in staff knowledge was essential to the achievement the study aim.
Evaluation of the Study

This PAR study was rigorously designed and conducted as described in the Methodology (Chapter 4). In this section I will defend the trustworthiness of the findings of the study in terms of the four qualitative criteria recommended by Lincoln and Guba (2005) are: 1) credibility 2) transferability 3) dependability and 4) confirmability. These criteria were adopted to ensure that readers had sufficient information to be able to assess the validity of this study. In preparing the final version of this dissertation, I have completed the Checklist of Consolidated Criteria for Reporting Qualitative Research (Tong, Sainsbury & Craig, 2007) and believe that I have reported accurately all necessary elements (See Appendix T).

Credibility

The basis of credibility is that an informed reader is able to look at the research design, methods for data collection and analysis and find them to be sensible for the purpose they were created; i.e. to answer the research question (Lincoln & Guba, 2005). I used triangulation, or multiple methods research, so that data was collected from multiple sources and could be put in context. The sources of data collection for this study were: individual interviews; focus groups and observation, all of which are the primary methods of data collection in qualitative research. As there were different methods of data collection, the findings from the data analysis were able to be supplemented and verified from multiple perspectives.
Each form of data that was collected was described and justified in the methodology chapter. This approach to data analysis means the findings of this study are credible. The credibility of the findings is enhanced by the evidence found during the literature review and the biological similarity of all women during birth.

**Transferability**

Transferability can be defined as the extent to which the findings from a study can be applied to other situations (Merriam, 1995). Transferability is a decision for the informed reader who would seek to replicate a study like this in a different setting. I have given sufficient contextual detail to allow a potential new researcher to decide what part of this study’s methodology would be most suitable for their context. The findings of the study that have the greatest potential to be transferred are those concerned with factors that optimise perineal outcomes during birth. The findings about factors that promote practice change need to be considered in their cultural context.

**Dependability**

Dependability refers to what would happen if the work was repeated in the same context, using the same methods and participants. Potentially, similar result will be obtained (Given, 2008, Lincoln & Guba, 2005). There is a close relationship between credibility and dependability and they may be achieved through the use of ‘overlapping methods, such as the focus group and individual interview’ (Lincoln & Guba, 2005).
In this study, every step in the research process was reported in detail to address the dependability issue. I have confidence that a proper research practice was adopted and the same results would be achieved if a person similar to me was to conduct the study using the same or similar methods.

**Confirmability**

The concept of confirmability relates to presenting an unbiased account of the research findings. Confirmability means that the research findings can be seen to have come from participants’ experiences and ideas and not the researcher’s preferences and assumptions. An audit trial is inherent in the way that the findings were generated from the raw data. In the findings chapter and associated appendices I show how all findings are directly linked to the data which was collected from participants. Every method adopted and decision made was explained in detail in this dissertation. The use of triangulation was clearly described in order to fulfil the criteria for confirmability and enhance trustworthiness.
The Strengths

As discussed above, Management Involvement and Support; New Evidence-Based Midwifery Practice Guidelines and Focussed Staff Training were all strengths of the present study. This study had strong foundations including a robust review of the literature. The action research methodology was well described and defended from established expert sources. I followed the methodological principles of PAR as I planned the project, collected appropriate data, reflected upon and analysed the data. The PAR approach was strengthened because of the inclusion of anatomy, physiology, evidence-based practice and midwifery theory in the way in which the PAR change process and staff education were approached. Compared with the nurse/midwives in the hospital, most of whom did not have a degree, I had higher academic qualifications which gave me a good level of credibility and respect. My credibility was also enhanced by the strong support from my supervisor and her visits to the hospital during the conduct of the study.

The Potential Limitations

The study was conducted in only one hospital in Kuala Lumpur. Clinical nurse/midwives were not involved as PAR members as the managers wanted those roles. However, the clinicians were all involved in the educational activities and had the opportunity to contribute via focus groups. As recommended by Meyer (2000) those seeking to generalise findings about practice change from this study need to consider the cultural differences, if any, between the Malaysian culture of this study and the culture into which the findings may be transferred.
**Key Recommendations**

**Practice**

1. The labour ward environment should be designed in consultation with women and midwives to optimise women’s sense of safety, comfort and ability to move freely in labour.

2. Collaborative practice between doctors and nurses/midwives needs to be enhanced. One strategy that has been somewhat effective in Australia is to open areas that are currently restricted to doctors to make them multidisciplinary spaces e.g. shared tea room, shared meeting room, shared place to access journal articles to be made available. Sharing these spaces fosters trusting relationships and improves interprofessional communication. With better interprofessional relationships, interprofessional collaboration is improved with better outcomes for childbearing women and their babies.

3. Staff need access to contemporary knowledge sources which includes a hospital library that has texts and journals; most particularly online journals.

4. Skilled educators should facilitate clinicians in all disciplines to incorporate evidence based practice activities into everyday practice.
Midwifery Education

1. The Nursing and Midwifery Board and Ministry of Health Malaysia should review the curriculum of midwifery training. The basic midwifery training provided by the Ministry of Health should be upgraded and standardised to the same level as nurse training.

2. Develop a Diploma and a Bachelor of Midwifery degree which could be separate from a nursing qualification. Those nurses who need a midwifery qualification could continue to complete the one year post basic qualification. Alternately, the Diploma and the Bachelor’s degree for all nurses could have both nursing and midwifery training included, although that is a more expensive way to train midwives and many nurses would never use their midwifery training. Malaysia should develop a Master of Midwifery degree for the leaders in midwifery practice, administration, education and research areas. This degree could be developed collaboratively with an Australian university.

3. Research and evidence-based practice should be emphasised in Midwifery curricula.

5. Continuous Midwifery Education (CME) programme should be run collaboratively by either the hospital or university to build up research information sharing and collaboration between academics and clinicians.

6. Midwifery Conference/colloquium should be conducted every year in each maternity unit.

**Midwifery Research**

1. Conduct collaborative research training between hospitals and universities.

2. Research team collaboration between the university and hospital.

**Management and Policy**

1. Integrate research into each hospital; particularly using PAR.

2. Encourage and provide resources to support research activity.

3. Create a specific team for practice guideline oversight and updates (perhaps the same team as the research team)

4. Standardise clinical procedures according to EBP
Conclusion

This dissertation has defended the thesis that midwifery practice can be changed to optimise perineal outcomes if a Participatory Action Research approach to change is supported by the relevant managers.

Perineal trauma is minimised when birth happens in an environment that is perceived by the woman to be physically and emotionally safe. Factors that minimise perineal trauma include: antenatal perineal massage; adopting a non-supine position, particularly lateral position for birth; pushing is spontaneous, rather than directed; the woman pushes only when she has the urge to push; the application of warm packs to the perineum during late second stage and avoiding obstetric and anaesthetic interventions. A ‘hands off’ approach at birth, with the ensuing avoidance of episiotomy also reduces perineal trauma rates.

The three most important factors for promoting positive practice change in this study were: Management Involvement and Support; New Evidence-Based Midwifery Practice Guidelines and Focussed Staff Training. These three factors are, I believe, highly beneficial to any researcher or practitioner who is seeking to bring about practice change.
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http://nursing.moh.gov.my/modules/mastop_publish/?tac=Malaysia_Midwife_Board


# LIST OF APPENDICES

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<th>Appendix</th>
<th>Title</th>
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<tbody>
<tr>
<td>A</td>
<td>Ethics Committee University of Newcastle &amp; Southern Cross University</td>
</tr>
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<td>B</td>
<td>Malaysian National Medical Research Register</td>
</tr>
<tr>
<td>C</td>
<td>Research Flyer</td>
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<td>D</td>
<td>Information Statement</td>
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<tr>
<td>E</td>
<td>Consent Form</td>
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<tr>
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APPENDIX A:

(1) Ethical Approval of the University of Newcastle

HUMAN RESEARCH ETHICS COMMITTEE

Notification of Expedited Approval

To Chief Investigator or Project Supervisor:
Professor Kathleen Falky
Co-Co-investigators / Researchers:
Ms. Carolyn Hastie
Datuk Hashimi Abu Kassim

Protocol:
Optimising Perineal Outcomes for Women in Labour: An Action Research Study in Malaysia

Date:
13-Apr-2011
Reference No.
H-2011-0031
Date of Initial Approval:
13-Apr-2011

Thank you for your Response to Conditional Approval submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 13-Apr-2011.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request. Your approval number is H-2011-0031.

Professor Alison Ferguson
Chair, Human Research Ethics Committee

For communications and enquiries:
Research Ethics Administration
Research Services
Research Integrity Unit
HA146, Hunter Building
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 18999
F +61 2 492 17164
human-ethics@newcastle.edu.au

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(2) Ethical Approval of Southern Cross University

HUMAN RESEARCH ETHICS COMMITTEE (HREC)
HUMAN RESEARCH ETHICS SUB-COMMITTEE (HRESC)

NOTIFICATION OF APPROVAL

To: Professor Kathleen Fahy/Siti Mariam Muda
School of Health and Human Sciences/Nursing
Kathleen.fahy@scu.edu.au, ctmaryam_71@yahoo.com

From: Secretary, Human Research Ethics Committee
Division of Research, R. Block

Date: 18 August 2011

Project: Optimising pelvic floor outcomes for women in labour – an action research study.
Approval Number ECN-11-185

The Southern Cross University Human Research Ethics Committee has established, in accordance with
the National Statement on Ethical Conduct in Human Research – Section 5/Processes of Research
Governance and Ethical Review, a procedure for expedited review by a delegated authority.

This application has been considered by the Chair, HREC and has been approved. Your research may
commence.

This approval is subject to the following usual standard conditions.

Standard Conditions in accordance with the National Statement on Ethical Conduct in Human
Research (National Statement) (NS).

1. Monitoring
NS 5.5.1 – 5.5.10
Responsibility for ensuring that research is reliably monitored lies with the institution under which
the research is conducted. Mechanisms for monitoring can include:
(a) reports from researchers;
(b) reports from independent agencies (such as a data and safety monitoring board);
(c) review of adverse event reports;
(d) random inspections of research sites, data, or consent documentation; and
(e) interviews with research participants or other forms of feedback from them.

The following should be noted:

(a) All ethics approvals are valid for **12 months** unless specified otherwise. If research is continuing after 12 months, then the ethics approval **MUST** be renewed. Complete the Annual Report/Renewal form and send to the Secretary of the HREC.

(b) **NS 5.5.5**
    Generally, the researcher/s **provide a report every 12 months** on the progress to date or outcome in the case of completed research specifically including:
    - The maintenance and security of the records.
    - Compliance with the approved proposal
    - Compliance with any conditions of approval.
    - Any changes of protocol to the research.
    
    **Note:** Compliance to the reporting is **mandatory** to the approval of this research.

(c) Specifically, that the researchers **report immediately** and notify the HREC, in writing, for approval of **any change in protocol**. **NS 5.5.3**

(d) That a report is sent to HREC when the **project has been completed**.

(e) That the researchers **report immediately any circumstance** that might affect ethical acceptance of the research protocol. **NS 5.5.3**

(f) That the researchers **report immediately any serious adverse events/effects** on participants. **NS 5.5.3**

2. **Research conducted overseas**
   **NS 4.8.1 – 4.8.21**
   That, if research is conducted in a country other than Australia, all research protocols for that country are followed ethically and with appropriate cultural sensitivity.

3. **Complaints**
   **NS 5.6.1 – 5.6.7**
   Institutions may receive complaints about researchers or the conduct of research, or about the conduct of a Human Research Ethics Committee (HREC) or other review body. Complaints may be made by participants, researchers, staff of institutions, or others. All complaints should be handled promptly and sensitively.

   **Complaints about the ethical conduct of this research should be addressed in writing to the following:**

   **Ethics Complaints Officer**
   **HREC**
   **Southern Cross University**
   **PO Box 157**
   **Lismore, NSW, 2480**
   **Email:** [ethics.lismore@scu.edu.au](mailto:ethics.lismore@scu.edu.au)

   **All complaints are investigated fully and according to due process under the National Statement on Ethical Conduct in Human Research and this University. Any complaint you make will be treated in confidence and you will be informed of the outcome.**
APPENDIX B:

Ethical Approval for the Malaysian National Medical Research

MEDICAL RESEARCH & ETHICS COMMITTEE
MINISTRY OF HEALTH MALAYSIA

c/o Institute for Health Management
Jalan Rumah Sakit, Bangsar
59000 Kuala Lumpur

Ms Siti Mariam Muda
Faculty of Health
University of Newcastle

Madam,

NMR-10-1325-7387
Optimising Pelvic Floor Outcomes For Women In Labour : An Action Research Study

Project Location : Kuala Lumpur Hospital

With reference to your application, the Medical Research & Ethics Committee (MREC) of the Ministry of Health (MOH) Malaysia takes note this project is a requirement in the fulfillment of your PhD programme, School of Nursing & Midwifery, University of Newcastle.

The MREC has no objection from the ethical aspects to the conduct of this study and hope that the findings of this study can be shared and made known to the Ministry of Health Malaysia.

You are requested to submit end of project report and a copy of any publication arising from this project to the MREC.

Thank you.

Yours sincerely,

(DATO’ DR CHANG KIAN MENG)
Chairman
Medical Research & Ethics Committee
Ministry of Health Malaysia
APPENDIX C:

Research Flyer

---

Invitation to Participate in Midwifery Action Research Study

Q. Would you like to contribute to an exciting research project aimed at improving practice during birth so as to minimise pelvic floor trauma?

Your experience and opinions would be very helpful and valuable to this project.

If your answer to this question is **YES** then there are two ways you might want to be involved:

Firstly, you may want to be a co-researcher? That would mean being part of an action research group and getting involved in the design and conduct of this project. Being a co-researcher would require a fair level of involvement from you but you would learn more about research and could be part of any publications.

Second, if you would like to participate in the research but in a lesser way then I am also looking for many volunteers to be part of focus group interviews and this will only take about an hour of your time.

If you want to know more you can obtain an information sheet from:

Sri Rohana bt Mas Noor / Siti Noraznida bt Abkil
Pn Siti Muda (Phone: 019 254 6393) or Email at: siti.muda@uon.edu.au

Research conducted by:

Pn Siti Muda
RN, RM, B.Ng, MSc, PhD Candidate

Supervised by

Professor Dr Kathleen Fathy
Assoc.Professor Dr. Pauline Charette [Physiotherapy] and Ms Carolyn Hastie
School of Nursing and Midwifery
The University of Newcastle, Australia

http://www.newcastle.edu.au/school/nursing-midwifery/research/
APPENDIX D:
Information statement

Research Student: Siti Mariam Muda
PhD Candidate
No.26, Jln. Cerdik 2, Taman Universiti,
Kajang, Selangor,
MALAYSIA.
Mobile phone: 019 2546393
Email: siti.muda@uon.edu.au

Principle Supervisor: Kathleen Fahy
Professor of Midwifery
School of Nursing and Midwifery,
Faculty of Health, The University of Newcastle,
University Drive, Callaghan, Newcastle, 2308,
AUSTRALIA
Phone: (+61) (0)2 49215966
FAX: (+61) (0)2 49216301
Email: kathleen.fahy@newcastle.edu.au

RESEARCH TOPIC:
Optimising Pelvic floor Outcomes for Birthing Women: An Action Research Study in Malaysia
Approval H-2011-0211

Dear Madam,

You are invited to be part of a research project identified above which is being conducted by a PhD student, Mrs Siti Muda. The research is part of Mrs Sitima’s studies at the University of Newcastle, supervised by Professor Kathleen Fahy and Ms Carolyn Hastie from the School of Nursing and Midwifery at the University of Newcastle.

Why is the research being done?
The purpose of the research is to improve midwifery practice on the delivery suite so that pelvic floor outcomes for women are improved. Pelvic floor trauma following vaginal birth is a serious cause of postpartum pain and suffering for women across the world (Albers & Borders, 2007). At the Kuala Lumpur hospital the current rate of pelvic floor trauma for all birthing women stands at 32%. The research literature suggests that there may be ways to change midwifery practices so as to improve pelvic floor outcomes for women.

This study seeks to answer the Question: How can midwifery practice be improved to optimise pelvic floor outcomes for birthing women?
Who can participate in the research?

Practising midwives and some medical and midwifery managers are invited to participate in this research. Practising midwives who are currently, or were recently, working in delivery suite at Maternity Unit in Kuala Lumpur Hospital will be the main participants. There are three levels of participation:

1. Focus group interviews
2. Co-researcher action research group (selection will be based on diversity of participants e.g. age, educational attainment, cultural background, seniority).
3. Individual Interviews (for the midwifery and medical managers)

The individual interviews are primarily for the senior doctors and nurse/midwives of the hospital. The focus groups are primarily for practising midwives to share their knowledge and experiences about current practices related to labour and birth care as that may impact on pelvic floor outcomes. The action research co-researcher will meet in a group to design, conduct and evaluate the study with my guidance.

What choice do you have?

Participation in this research is entirely your choice. No one should put any pressure on you to either participate or not participate. Only those people who give their informed consent will be included as participants in this study. Whether or not you decide to participate, your decision will not disadvantage you.

If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you.

What would you be asked to do?

If you are a practising midwife you may offer to be involved at one or two levels

- **Level 1 you participate in a Focus Group Only**

You will be invited to attend group sessions either in the beginning or the end of the study of 1 to 1½ hour each. I will ask Questions about your own experiences with pelvic floor care in labour and also I will ask you about what you have observed. During this interview I will ask you to protect the privacy of those that you are speaking about using strategies such as using a false name when talking about a colleague.
Level 2 you may participate as a Co-Researcher in the Action Research Group

You are invited to indicate on the consent form if you would like to be considered for membership of the Action Research Group. I will be selecting up to 12 midwives who have consented to be involved in the core group of the action research project. There will be 9 -10 group sessions with each session lasting 1 to 1½ hours. In the group we will talk about current practices, we will plan and jointly conduct the focus groups; you will have the opportunity to attend and participate as a co-researcher. As a group we will consider the data that has been gathered during the assessment phase including the research evidence that is relevant and the information gathered during the focus groups and the interviews. Together we will design culturally sensitive educational interventions for midwives. You will have the opportunity, individually or in small teams, to conduct the educational intervention. Finally we will design and conduct an evaluation and make changes to the intervention, develop a clinical practice guideline and make change recommendations to the hospital in a formal report to which you will be an author if you wish. During the research I will ask you to sign a confidentiality agreement and to protect the privacy of those that you are speaking about using strategies such as referring to a colleague by using a false name.

If you are a doctor or nursing/midwifery manager you would participate in an interview on a one-to-one basis.

During the assessment phase of the study I would like to ask you about current practice, policy and procedures related to labour and birth care. I am interested in your ideas about how pelvic floor trauma rates can be reduced and what factors you think I should aim to change.

What are the risks and benefits of participating?

Co-researchers in the action research group will gain some insight into how research is conducted. They should also become more knowledgeable about the use of research evidence in a daily practice. All the midwives on the maternity unit should have an improved and updated understanding of how to promote pelvic floor integrity for women in labour and birth. This study may be used by others as a basis implementing a similar practice development project at other hospitals and community health centres in Malaysia.
There will be no physical risks to you if you participate in this study. However, this research may activate negative emotions for you. It is possible that you may experience some negative emotions about your own previous practices related to birth. It may also be that you had a negative pelvic floor outcome in your own birth experience. If you do feel upset at any stage I invite you to talk to me and if you wish I will make an appropriate referral for counselling.

**How will your privacy be protected?**

Only the researcher will be able to link your name to your data. All data provided to the supervisors or within any written reports will be de-identified. Your contact details will be kept separately from all other research data on the researchers password protected home computer and in paper form in a locked drawer of the researcher’s office. Your identity will be protected by the use of pseudonyms (others name) during data recording and/or transcription. Participants will be asked to maintain the confidentiality of the group discussion and not divulge the specific content to outside parties.

Your consent form and the de-identified research data will be stored in the School of Nursing and Midwifery for the required duration of five years and then all information will be destroyed according to University of Newcastle procedure.

**How will the information collected be used?**

The information collected in this project will be de-identified and will be use to firstly identify area for possible practice improvement. This information and some recommendations arising from it will be written as a report of stage one of the research and shared with to midwives in the core action research group (the co-researchers). The report will also be shared with the relevant managers and the senior management of Kuala Lumpur Hospital. I will be seeking their approval to design an educational intervention aimed at training midwives about how to optimise pelvic floor outcomes in birth. If approval is given I will then offer a series of educational workshops. Some of the learning materials which will be produced will be donated to the hospital so that they can be used for future educational session. I may in further use the learning materials to provide similar training elsewhere.

Lastly, the finding of this study will be published as a scholarly dissertation to be submitted for PhD degree. Journal articles may also be published in national and international journals.
What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have Questions, contact the researcher. I will then contact you to arrange a time convenient to you for the interview and group meeting.

If you would like to participate, please complete the attached Consent Form and return it to the researcher. An addressed, envelope with stamp is provided as part of this information and consent pack.

Further information
If you would like further information, please contact Mrs. Siti Muda (PhD student, University of Newcastle) on this Number; 019 254 6393 or Professor Dr Kathleen Fahy (Research Chief Supervisor) on (+61) (0) 2 492 15966.

Thank you for considering this invitation.

Research Student: Siti Muda
PhD Candidate
No.26, Jln. Cerdik 2, Taman Universiti, Kajang, Selangor, MALAYSIA.
Mobile phone: +61 (0)4 12090894
Email: siti.muda@uon.edu.au

Principle supervisor: Professor Kathleen Fahy
Professor of Midwifery
School of Nursing and Midwifery
University of Newcastle
Phone: +61 2 492 15966
Fax: +61 2 492 16981
Email: kathleen.fahy@newcastle.edu.au

Co supervisor: Pauline Chiarelli
Associate Professor
School of Health Sciences
University of Newcastle
Phone: +61 2 49 216046
Faximile: + 61 2 49 217902
Email: Pauline.Chiarelli@newcastle.edu.au

Complaints about this research

This project has been approved by the University’s Human Research Ethics Committee, Approval No. H- [2011-0021].
## APPENDIX E: Consent Form

**Research Student:** Siti Mariam Muda  
PhD Candidate  
No.26, Jln. Cerdik 2, Taman Universiti,  
Kajang, Selangor,  
MALAYSIA.  
Mobile phone: +61 (0)4 12090894  
Email: siti.muda@uon.edu.au

**Principle Supervisor:** Kathleen Fahy  
Professor of Midwifery  
School of Nursing and Midwifery,  
Faculty of Health, The University of Newcastle,  
University Drive, Callaghan, Newcastle,  
2308,  
AUSTRALIA  
Phone: (+61) (0)2 49215966  
FAX: (+61) (0)2 49216301  
Email: kathleen.fahy@newcastle.edu.au

### RESEARCH TOPIC:

**Optimising Pelvic floor Outcomes for Birthing Women: An Action Research Study**

**Approval H-2011-0211**

I agree to participate in the above research project. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand my participation is voluntary and I am free to withdraw at any time, without giving any reason and without any penalty or consequence from my employer.

I am a practising midwife and I consent to participate in ONE OR BOTH of the following:

- A Focus Group sessions only  
- The Action Research Core Group

I am a senior doctor or a nursing/midwifery manager and I consent to participate in:

- A face-to-face interview

I understand the steps being taken to protect my confidentiality and that a false name, which I may choose, will be used at all times during research process and publications.

| Name: | ____________________________ |
| Signature: | ____________________________ |
| Date: | ____________________________ |

**Contact details:**

Phone ____________________________  
Email ____________________________

Please complete and return the attached Consent Form in the reply envelope provided. Thank you.
APPENDIX F:
Consent for Confidential Agreement

Research Student: Siti Mariam Muda
PhD Candidate
No.26, Jln. Cerdik 2, Taman Universiti,
Kajang, Selangor,
MALAYSIA.
Mobile phone: +61 (0)4 12090894
Email: siti.muda@uon.edu.au

Principle Supervisor: Kathleen Fahy
Professor of Midwifery
School of Nursing and Midwifery,
Faculty of Health, The University of Newcastle,
University Drive, Callaghan, Newcastle, 2308,
AUSTRALIA
Phone: (+61) (0)2 49215966
FAX: (+61) (0)2 49216301
Email: kathleen.fahy@newcastle.edu.au

RESEARCH TOPIC:
Optimising Pelvic floor Outcomes for Birthing Women: An Action Research Study
Approval H-2011-0211

I understand the steps being taken to protect confidentiality and that a false name, which I may chose, will be used when mentioning other people at all times during research process and publications.

I understand that I have to keep confidential all information in this study as describe in the Information Statement.

Name: __________________________________________________________
Signature: _________________________________________________________
Date: _____________________________________________________________

Contact details:
Phone ______________________
Email ______________________

Complaints about this research
This project has been approved by the University of Newcastle’s Human Research Ethics Committee, Approval No. H-2011-2011.
If you have any concerns related to the ethical conduct of the research you may contact:
• The researcher;
• The researcher’s supervisors and/or
• Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au
the Secretariat at the National Medical Research Malaysia at nmrr@gov.my (NIH Secretariat, Ministry of Health Malaysia; C/o Institute for Health Management, Jalan Rumah Sakit, Bangsar, 50900 Kuala Lumpur.
Phone: 03 - 2287 4032 Fax: 03 - 2287 4030 Email: URL: http://www.nih.gov.my)
APPENDIX G:

Summary of Evidence-Based Health Care

Evidence-based medicine (EBM) or evidence-based practice (EBP) aims to apply the best available evidence gained from the scientific method to clinical decision making.[1] It seeks to assess the strength of evidence of the risks and benefits of treatments (including lack of treatment) and diagnostic tests.[2] Evidence quality can range from meta-analyses and systematic reviews of double-blind, placebo-controlled clinical trials at the top end, down to conventional wisdom at the bottom. The UK National Health Service categories the quality of research evidence as:

- **Level A**: Consistent Randomised Controlled Clinical Trial. Clinical decision rule validated in different populations e.g. Meta-analysis of multiple trials or a multi-national trial.
- **Level B**: Consistent Retrospective Cohort, Exploratory Cohort, Ecological Study, Outcomes Research, case-control study; or extrapolations from level A studies.
- **Level C**: Case-series study or extrapolations from level B studies.
- **Level D**: Expert opinion without explicit critical appraisal, or based on physiology, bench research or first principles.

At the organizational or institutional level, EBM results in Evidence-Based Guidelines. In guidelines recommendations for a clinical service (intervention) are classified by the balance of risk versus benefit of the service and the level of evidence on which this information is based. The U.S. Preventive Services Task Force uses the following ways of ranking their level of recommendation:

- **Level A**: Good scientific evidence suggests that the benefits of the clinical service substantially outweigh the potential risks. Clinicians should discuss the service with eligible patients.
- **Level B**: At least fair scientific evidence suggests that the benefit of the clinical service outweighs the potential risks. Clinicians should discuss the service with eligible patients.
- **Level C**: At least fair scientific evidence suggests that there are benefits provided by the clinical service, but the balance between benefits and risks are too close for making general recommendations. Clinicians need not offer it unless there are individual considerations.
- **Level D**: At least fair scientific evidence suggests that the risks of the clinical service outweigh potential benefits. Clinicians should not routinely offer the service to asymptomatic patients.
- **Level I**: Scientific evidence is lacking, of poor quality, or conflicting, such that the risk versus benefit balance cannot be assessed. Clinicians should help patients understand the uncertainty surrounding the clinical service.

References


APPENDIX H:
Summaries of Research Articles

Effects of Episiotomies Compared with Non-Intervention


Background

For successful vaginal delivery, the vaginal opening must dilate slowly, in order to allow the appropriate stretching of the tissues. The levator ani muscles are under voluntary control and will only fully relax when the woman feels calm and safe. When the baby descends quickly, and/or the woman is tense, then the tissues tear much more often. Tears can involve the perineal skin or extend to the muscles and the anal sphincter and anus.

In order to determine if episiotomy is more beneficial than harmful to the woman the review Carrol and Mignini searched the medical literature for randomised controlled trials that compared episiotomy as needed (restrictive) compared with routine episiotomy to determine the possible benefits and harms for mother and baby. They identified eight trials involving more than 5000 women.

Key Findings

Restrictive episiotomy policies appeared to give a number of benefits compared with using routine episiotomy. Women experienced less severe perineal trauma, (relative risk RR 0.67, 95% confidence interval CI 0.49 to 0.91), less posterior perineal trauma, less suturing and fewer healing complications at seven days (RR 0.69, 95% CI 0.56 to 0.85); with no difference in occurrence of pain, urinary incontinence, painful sex or severe vaginal/perineal trauma after birth. Overall, women experienced more anterior perineal damage with restrictive episiotomy.

Authors’ Conclusion

Policies aimed at restricting the use of episiotomy appear to have a number of benefits compared to policies based on routine episiotomy. There is less posterior perineal trauma, less suturing and fewer complications, no difference for most pain measures and severe vaginal or perineal trauma, but there was an increased risk of anterior perineal trauma with restrictive episiotomy.

Our Recommendation, in line with the NICE Guidelines from the UK Department of Health

The restrictive use of episiotomies is recommended because their routine use has harmful effects. Third and fourth degree tears are not prevented by episiotomies and indeed many 3rd and 4th degree tears happen as an extension of an episiotomy. To prevent anal sphincter damage services must reduce the risk factors which cause anal sphincter damage i.e. 1) the liberal use of episiotomy and 2) forceps delivery (Wheeler & Roberts, 2007; Eason et al. 2000, Nager & Hellwell 2001)
Effects of Continuous CTG vs Intermittent Auscultation on Women and Babies

Our Recommendation, in line with the WHO Recommendation

The aim is to allow women freedom to move in labour so as to increase the normal birth rate. Continuous CTG should be reserved for women who have or are at increased risk of complications e.g. oxytocin induction, EDB, ante-partum haemorrhage. Women who have no risks and whose baby’s growth and heart rates have been normal should be monitored via Pinnard’s or Doppler every 15 mins in labour. Listening should occur for 60 seconds immediately following a contraction. If abnormality is detected then a CTG may need to be applied.

Summary

A continuous CTG gives a written record of FHR but it prevents woman from moving during labour. This means that women may be unable to change positions or use a bath to help with comfort and control during labour. This review compared continuous CTG monitoring with intermittent auscultation. It found 12 trials involving over 57,000 women. Most studies were not of high quality and the review is dominated by one large, well-conducted trial of almost 13,000 women. These women were at varying levels of risk of complications: their membranes were ruptured as early as possible and oxytocin stimulation of contractions was used in about 25% of the women.

KEY FINDING: For the baby: There was no difference in the number of babies who died during or shortly after labour (about 1 in 300 event). (Relative risk (RR) 0.85, 95% confidence interval CI) 0.59 to 1.23, n = 33,513, 11 trials). The was a reduction in the rate of neonatal seizures (about 1 in 500 event) (RR 0.50, 95% CI 0.31 to 0.80, n = 32,386, nine trials) although no significant difference was detected in cerebral palsy (RR 1.74, 95% CI 0.97 to 3.11, n = 13,252, two trials).

For the women: There was a significant increase in caesarean sections associated with continuous CTG (RR 1.66, 95% CI 1.30 to 2.13, n = 18,761, 10 trials). Women were also more likely to have an instrumental vaginal birth (RR 1.16, 95% CI 1.01 to 1.32, n = 18,151, nine trials).

Data for subgroups of low-risk, high-risk, preterm pregnancies and high quality trials were consistent with overall results. Access to fetal blood sampling did not appear to influence the difference in neonatal seizures nor any other pre-specified outcome.

Authors’ conclusions

Continuous CTG during labour is associated with a reduction in neonatal seizures, but no significant differences in cerebral palsy, infant mortality or other standard measures of neonatal well-being. However, continuous CTG was associated with an increase in caesarean sections and Instrumental vaginal births. The real challenge is how best to convey this uncertainty to women to enable them to make an informed choice without compromising the normality of labour.

References

Alfirevic Z, Devere D, Gyte GMJ. Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour. Cochrane Database of Systematic Reviews 2006, Issue 3

Effects of Directed Pushing Compared with Delayed, Spontaneous Pushing

Our Recommendation for Policy

The practice of directed pushing should be abandoned for women who have no EDB. Directed pushing confers no benefits for the baby or the mother and does damage to both. (Roberts, & Hanson 2007)

Background

Roberts, & Hanson (2007) reports on a meta-analysis of nine randomised controlled trials comparing directed pushing with spontaneous bearing down. Spontaneous bearing down efforts are very different from midwives’ directed pushing instructions. The meta-analysis revealed that spontaneous pushing, compared with directed, lengthened the duration of second stage by an average of 58 minutes. Spontaneous pushing reduced the time spent pushing and maternal exhaustion. For the delayed, spontaneous pushing group, there was a significant increase in spontaneous vaginal births (RR, 1.22; 95% CI, 1.05–1.42). There was also an overall 31% reduction in rotational or mid-pelvic instrument deliveries (RR, 0.79; 95% CI, 0.55–0.95). No adverse outcomes for the baby or woman were reported with the use spontaneous pushing and the prolongation of the passive phase of 2nd stage labour.

KEY FINDINGS

For the baby: The use of directed pushing efforts results in lower maternal blood pressure and placental blood flow, lower fetal pH and PO2, higher PCO2, more frequent occurrence of non-reassuring fetal heart rate (FHR) patterns, delayed recovery of FHR decelerations and subsequent newborn academia, and lower Apgar scores.

For the woman: Spontaneous pushing reduces forceps births and increases normal births. Directed pushing results in fatigue, stress, an increase in pelvic floor and perineal trauma, decreased bladder capacity and an increase in the incidence of uro-dynamic stress incontinence at 3 months postpartum.

References


APPENDIX I:
Semi-Structured Interview Guide

<table>
<thead>
<tr>
<th>Interview Parts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory pleasantries (5 minutes)</td>
<td>Hello, my name is Siti. First of all I like to thank you for spending time with me today. We’ll be here for about an hour and a half. The interview is part of my assessment of the current situation where the reason we’re here today is to get your opinions and experience about issues related to perineal trauma in KL Maternity Hospital.</td>
</tr>
<tr>
<td>Rapport with participants (10 minutes)</td>
<td>For introduction, I think it’s better for you to introduce yourself. Please tell how long you have worked in this hospital and any birth experienced in this hospital.</td>
</tr>
</tbody>
</table>
| General Question (15 minutes)           | A. EXPERIENCE
   Would you like to share your experience of your best practice in helping a woman maintain perineal integrity?
   a) What was it that you did that was helpful?
   b) Why do you think that action was effective?
   Who has been your best teacher in relation to preventing perineal trauma?
   a) Can you describe how your teacher practised labour and birth care?
   b) Why was that good do you think?
   c) Who else had a good teacher?
   d) Specific Questions (30 minutes)
   B. KNOWLEDGE
   I would like you to discuss how to prevent perineal trauma by the way care in provided to women during labour and birth. Would you like to begin by saying one thing that they do that is aimed at preventing perineal trauma?
   a) How do you think that helps?
   b) Are there any other ways that action might be helpful?
   C. OPINION
   What do you think are the major causes of perineal trauma; particularly severe perineal trauma?
   a) What makes you think that?
   b) Are there any other causes?
   What do you think is stopping you and other midwives from doing more to prevent perineal trauma?
   a) Do you think we should try to change that?
   b) What do you think would need to happen to bring about that change?
   c) Are there any other factors that are stopping you and others from being even better at optimising perineal outcomes? |
| Closing Question (10 minutes)            | If it were your job to improve perineal outcomes, what action would you take to yourself?                                                                                                                  |
| Closing session (5 minutes)              | Thanks for talking about vaginal birth and the incident of perineal trauma. Your opinion and comments have given me lots of different ways to see this issue. I will summarise the outcomes of this interview and combine it with others and you will get all access to my summary. Lastly I would like to thank for your time. |
# APPENDIX J:

## Focus Group Interview Guide

<table>
<thead>
<tr>
<th>Interview Parts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introductory pleasantries (5 minutes)</strong></td>
<td>Hello, my name is Siti. First of all I like to thank everyone for spending time to come today. We’ll be here for about an hour and a half. This focus group is part of my assessment of the current situation where the reason we’re here today is to get your opinions and experience about issues related to perineal trauma in KL Hospital. I’m going to lead our discussion today. I also would like to introduce Miss Ayu. She will be recording our discussion today for my report.</td>
</tr>
<tr>
<td><strong>Ground rules (5 minutes)</strong></td>
<td>Before we proceed further, I would like to go over some ground rules which useful to allow out conversation flow freely throughout the session. 1) Please talk one at time and avoid side conversation. 2) respect each other 3) there is no right or wrong answer</td>
</tr>
<tr>
<td><strong>Rapport with participants (self-introduce session) (10 minutes)</strong></td>
<td>For introduction, I think it’s better for us to introduce ourselves. Please tell your name, how long you have worked in this hospital and any birth experienced in this hospital. I also would like to have a volunteer to write the ideas up on the white board.</td>
</tr>
<tr>
<td><strong>General Question (15 minutes)</strong></td>
<td><strong>Experience</strong> 1. Would anyone like to share their experience of their best practice in helping a woman maintain perineal integrity?</td>
</tr>
<tr>
<td><strong>Specific Questions (30 minutes)</strong></td>
<td><strong>Knowledge</strong> 1. I would like you to discuss how to prevent perineal trauma by the way care in provided to women during labour and birth? 2. OK, we have some of the ways that you are currently working to minimise perineal trauma. Are there any others that have not been mentioned yet? <strong>OPINION</strong> 1. What do you think are the major causes of perineal trauma; particularly severe perineal trauma? 2. What do you think is stopping you and other midwives from doing more to prevent perineal trauma?</td>
</tr>
<tr>
<td><strong>Present material to gauge reaction (10 minutes)</strong></td>
<td>Take a few minutes and study this poster. 1. How do you feel about these findings?</td>
</tr>
<tr>
<td><strong>Closing Question (10 minutes)</strong></td>
<td>If it were your job to improve perineal outcomes, what action would you take to yourself?</td>
</tr>
<tr>
<td><strong>Closing session (5 minutes)</strong></td>
<td>Thanks for coming today and talking about vaginal birth and the incident of perineal trauma. Your opinion and comments have given me lots of different ways to see this issue. I will summarise the outcomes of this meeting and combine it with others and you will get all access to my summary. Lastly I would like to thank for your time.</td>
</tr>
</tbody>
</table>
## APPENDIX K:
The PAR Group Activities

<table>
<thead>
<tr>
<th>PAR Group Meeting Session</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 1st meeting 28/6/2011     | Form the group  
|                           | Group rules detailed  
|                           | Reflections |
| 2nd meeting 13/7/2011     | Focus group  
|                           | Reflections |
| 3rd meeting 9/8/2011      | Compiling research articles  
|                           | Observation in labour ward  
|                           | Reflection |
| 4th meeting 26/9/2011     | Identify which practice is worked in labour word  
|                           | Decide on intervention  
|                           | PPT educational presentation  
|                           | Reflections |
| 5th meeting 5/10/2011     | Staff training and educational session  
|                           | 1st Workshop with Prof Fahy  
|                           | Survey: PPT presentation  
|                           | Reflections |
| 6th meeting               | Review and discuss the findings of survey  
|                           | Review the changes  
|                           | Review of practice guideline  
|                           | Reflections |
| 7th meeting               | Review practice and changes  
|                           | Collect materials for Seminar from Education Unit Ministry of Health |
| 8th meeting 2/12/2011     | Final preparation for Seminar Day on 9th Dec 2011  
|                           | Reflections |
| 9th meeting 9/12/2011     | Seminar Day with Prof Fahy  
|                           | 2nd Workshop & activities  
|                           | Discuss the guidelines  
|                           | Reflections |
| 10th meeting 30/12/2011   | Review and discuss the guidelines  
|                           | Proposed New Guidelines to Head of Department Reflections |
| 11th meeting 15/2/2012    | Focus group  
|                           | Distribution of Mini booklet of EBP Guideline  
|                           | Reflections |
| 12th meeting 24/2/2012    | Evaluation  
|                           | Closing the group and farewell  
|                           | Reflections |
### APPENDIX L:
Observation Guide

<table>
<thead>
<tr>
<th>Observation Aspects</th>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
</table>
| The physical setting | Where    | Where is the process of birth happening?  
A: ____________________  
What are the main features of the physical setting?  
A: ____________________ |
| The people          | Who      | Who is present?  
A: ____________________  
What are their roles?  
A: ____________________ |
| Activities          | What     | What are nurses/midwives doing?  
A: ____________________  
What practices are they imposing on women in labour?  
A: ____________________ |
| FreQuency and duration | When    | When are they in the room and when are they beside of the labouring and birthing women?  
A: ____________________  
How long are the midwives with the women?  
A: ____________________ |
| Process             | How      | How is the process of birth organised?  
A: ____________________  
How are the nurse/midwives interacting and communicating with each other; with the woman?  
A: ____________________ |
| Outcomes            | Why      | Is there perinea trauma happening? Why?  
A: ____________________  
What did not happen and why?  
A: ____________________ |
APPENDIX M:
Self-administered Questionnaire

Southern Cross University
Chief Investigator: Professor Kathleen Fahy,
PhD candidate Mrs Siti Muda Phone: 019 2546393

Invitation to Contribute to this Research

Please answer the questions below and put your completed survey in the sealed box at the Nursing Counter in Labour Ward 22nd October 2011.

Thank you for taking time to share your knowledge and opinion. No questions will be asked that will identify you but we do want to know your staff category.

1. Please circle one of the following categories:
   A. Medical student, B. Nurse-midwife student/Nursing student,
   C. Registered Nurse, D. Registered Midwife, E. Community Nurse,
   F. Registered Doctor in training, G. Specialist Doctor

2. What is your age range? Please tick one of the following categories:
   a. < 30 years  b. 31-40 years  c. 41-50 years  d. 51 years or older

<table>
<thead>
<tr>
<th></th>
<th>KEY 1 = strongly disagree</th>
<th>KEY 2 = disagree</th>
<th>KEY 3 = agree</th>
<th>KEY 4 = strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>The environment of the room has no effect on the woman’s labour</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The policy of the maternity unit should REQUIRE midwives to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Make ALL women wear hospital clothes</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Keep ALL women lying on the bed throughout labour</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Prevent ALL women from drinking clear fluids as desired in labour</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Encourage ALL women to birth in supine position</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Maintain continuous CTG on ALL women, even if normal</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. Direct ALL women how and when to push in labour</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>g. Cut an episiotomy to prevent perineal tearing</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX N:  
Steps to Facilitate Group Reflective Process

<table>
<thead>
<tr>
<th>Step 1:</th>
<th>Find enough nurse/midwives to form a research group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2:</td>
<td>Ensure the nurse or midwives are ready to make a commitment to be research group</td>
</tr>
<tr>
<td>Step 3:</td>
<td>Decide venue and a regular meeting day and time</td>
</tr>
<tr>
<td>Step 4:</td>
<td>Write a brief research proposal</td>
</tr>
<tr>
<td>Step 5:</td>
<td>Checks on ethics approval processes in your organisation</td>
</tr>
<tr>
<td>Step 6:</td>
<td>Get the project underway and decide on who facilitates meetings</td>
</tr>
<tr>
<td>Step 7:</td>
<td>Share the business of the first two meetings</td>
</tr>
<tr>
<td>Step 8:</td>
<td>Share the first reflective task</td>
</tr>
<tr>
<td>Step 9:</td>
<td>Share the practice stories</td>
</tr>
<tr>
<td>Step 10:</td>
<td>Identify the thematic concern</td>
</tr>
<tr>
<td>Step 11:</td>
<td>Generate the action plan and begin the action research cycles</td>
</tr>
<tr>
<td>Step 12:</td>
<td>Write a research report</td>
</tr>
<tr>
<td>Step 13:</td>
<td>Disseminate the findings</td>
</tr>
</tbody>
</table>

(Taylor, 2000)
## APPENDIX O:
Criteria for Trustworthiness and Quality Protocol

<table>
<thead>
<tr>
<th>Quality Criteria</th>
<th>Possible Provision Made By Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>• Adoption of appropriate, well recognised research methods</td>
</tr>
<tr>
<td></td>
<td>• Development of early familiarity with culture of participating organisations</td>
</tr>
<tr>
<td></td>
<td>• Random sampling of individuals serving as informants</td>
</tr>
<tr>
<td></td>
<td>• Triangulation via use of different methods, different types of informants and different sites</td>
</tr>
<tr>
<td></td>
<td>• Tactics to help ensure honesty in informants</td>
</tr>
<tr>
<td></td>
<td>• Iterative Questioning in data collection dialogues</td>
</tr>
<tr>
<td></td>
<td>• Negative case analysis</td>
</tr>
<tr>
<td></td>
<td>• Debriefing sessions between researcher and superiors</td>
</tr>
<tr>
<td></td>
<td>• Peer scrutiny of project</td>
</tr>
<tr>
<td></td>
<td>• Use of “reflective commentary”</td>
</tr>
<tr>
<td></td>
<td>• Description of background, Qualifications and experience of the researcher</td>
</tr>
<tr>
<td></td>
<td>• Member checks of data collected and interpretations/theories formed</td>
</tr>
<tr>
<td></td>
<td>• Thick description of phenomenon under scrutiny</td>
</tr>
<tr>
<td></td>
<td>• Examination of previous research to frame findings</td>
</tr>
<tr>
<td>Transferability</td>
<td>Provision of background data to establish context of study and detailed description of phenomenon in Question to allow comparisons to be made</td>
</tr>
<tr>
<td>Dependability</td>
<td>Employment of “overlapping methods”</td>
</tr>
<tr>
<td></td>
<td>In-depth methodological description to allow study to be repeated</td>
</tr>
<tr>
<td>Confirmability</td>
<td>Triangulation to reduce effect of investigator bias</td>
</tr>
<tr>
<td></td>
<td>Admission of researcher’s beliefs and assumptions</td>
</tr>
<tr>
<td></td>
<td>Recognition of shortcomings in study’s methods and their potential effects</td>
</tr>
<tr>
<td></td>
<td>In-depth methodological description to allow integrity of research results to be scrutinised</td>
</tr>
<tr>
<td></td>
<td>Use of diagrams to demonstrate “audit trail”</td>
</tr>
</tbody>
</table>

(Lincoln and Guba, 2005)
## APPENDIX P:

### Labour Ward Images at KL Maternity Hospital

<table>
<thead>
<tr>
<th>Image P1. The entrance to Birth Suite</th>
<th>Image P2. The nursing desk</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image P1" /></td>
<td><img src="image2.png" alt="Image P2" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Image P3" /></td>
<td><img src="image4.png" alt="Image P4" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Image P5. Extra beds for birth</th>
<th>Image P6. The labour room door</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image P5" /></td>
<td><img src="image6.png" alt="Image P6" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Image P7. The bed in labour room</th>
<th>Image P8. The equipment in the labour room</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Image P7" /></td>
<td><img src="image8.png" alt="Image P8" /></td>
</tr>
</tbody>
</table>
## APPENDIX R:

**Thematic Analysis with PAR Group**

<table>
<thead>
<tr>
<th>Category</th>
<th>Themes (sub-categories)</th>
<th>Data extract</th>
<th>Reflection or comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff development</td>
<td>Mentoring</td>
<td>Mentor new staff about the use of evidence based practiced during management of labour to optimise perineal integrity.</td>
<td>This is done so that they can provide guidance and practice what is suggested.</td>
</tr>
<tr>
<td></td>
<td>Didactic Teaching of</td>
<td>Revise pelvic floor anatomy, Revise physiology of normal birth, Distribution of research articles, midwifery books and poster/diagram of labour, Promoting the use of evidence based practice, Episiotomy in normal birth, Teach and promote antenatal perineal massage</td>
<td>Important to emphasise and revise this topic as a main basic related to the study.</td>
</tr>
<tr>
<td></td>
<td>Specific Content</td>
<td>Prepare, present, discuss and review of educational using PPT.</td>
<td>Focused on evidence based practiced</td>
</tr>
<tr>
<td></td>
<td>Knowledge Promotion</td>
<td>Display the Poster of modifiable factors of perineal trauma and research article in labour ward/clinic, Display birth statistic related to the research project in and outside labour ward, Compile pamphlet, poster, brochure and other materials related to the topic of study, Put the books in the labour ward to attract staff read</td>
<td>To promote awareness about the harmful of perineal trauma to the pelvic floor.</td>
</tr>
<tr>
<td></td>
<td>with Specific Content to Protect the Perineum</td>
<td></td>
<td>No poster or article were display in labour ward previously, To let staff know and alert about the study</td>
</tr>
<tr>
<td>Create Evidence-Based Practice Guidelines</td>
<td>Revise and review the maternity guideline book from KL Hospital</td>
<td>The guideline book is more on medical intervention, No specific management for normal birth</td>
<td>Review the current guideline book and proposed new guideline, Review and consider if change should occur to these practices</td>
</tr>
</tbody>
</table>
APPENDIX S:
Flow Chart the Development of Practice Guideline

Define topic

Is the topic related to clinical decision-making?

Are there suitable existing guideline?

Identify health outcomes and barriers to change

Review scientific evidence of efficacy of interventions in relation to

Is there Level I-IV evidence in respect of each recommendation?

Yes

Develop evidence-based recommendations or update existing recommendations

Consultation and pilot testing

Dissemination and implement

Evaluate and revise

No

STO

No

STO

Yes

Is there consensus?

No

Yes

Develop consensus-based recommendations that indicate lack of clear evidence but acknowledge consensus

Make brief-non consensus statement (state options and acknowledge uncertainty)

(National Health Resources Medical Council, 1999)
## APPENDIX T:
Consolidated Criteria for Reporting Qualitative Studies (COREQ)

### 32- Item Checklist

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Guide question/ Description</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Domain 1: Research Team and Reflexivity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Personal characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Interviewer/ facilitator</td>
<td>Which author conducted the interviewer of focus group?</td>
<td>The student researcher</td>
</tr>
<tr>
<td>2</td>
<td>Credentials</td>
<td>What were the researcher’s credentials?</td>
<td>Student PhD</td>
</tr>
<tr>
<td>3</td>
<td>Occupation</td>
<td>What was their occupation at the time of the study?</td>
<td>Full time PhD student</td>
</tr>
<tr>
<td>4</td>
<td>Gender</td>
<td>Was the researcher male or female?</td>
<td>Female</td>
</tr>
<tr>
<td>5</td>
<td>Experience and training</td>
<td>What experience or training did the researcher have?</td>
<td>Involved in methodology research course</td>
</tr>
<tr>
<td></td>
<td><strong>Relationship with participants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Relationship establish</td>
<td>Was a relationship established prior to study commencement?</td>
<td>Relationship commence when researcher arrived at Kuala Lumpur</td>
</tr>
<tr>
<td>7</td>
<td>Participants knowledge of the interviewer</td>
<td>What did the participants know about the researcher?</td>
<td>Participants know the reasons for doing the research</td>
</tr>
<tr>
<td>8</td>
<td>Interviewer characteristics</td>
<td>What characteristics were reported about the interviewer/facilitator?</td>
<td>The interviewer/facilitator have a knowledge and expertise in the field of the study</td>
</tr>
<tr>
<td></td>
<td><strong>Domain 2: Study design</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Methodological orientation and theory</td>
<td>What methodological orientation was stated to underpin the study?</td>
<td>Participatory action research</td>
</tr>
<tr>
<td></td>
<td><strong>Participant selection</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Sampling</td>
<td>How participants selected?</td>
<td>Purposive sampling</td>
</tr>
<tr>
<td>11</td>
<td>Method of approach</td>
<td>How were participants approached?</td>
<td>Face to face</td>
</tr>
<tr>
<td>12</td>
<td>Sample size</td>
<td>How many participants were in the study?</td>
<td>32 participants</td>
</tr>
<tr>
<td>13</td>
<td>Non-participation</td>
<td>How many people refused to participate or dropped out?</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td><strong>Setting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Setting of data collection</td>
<td>Where was the data collected?</td>
<td>At the hospital</td>
</tr>
<tr>
<td>15</td>
<td>Presence of non-participation</td>
<td>Was anyone else present besides the participants and researchers?</td>
<td>Nobody</td>
</tr>
<tr>
<td>16</td>
<td>Description of sample</td>
<td>What are the important characteristics of the sample?</td>
<td>Demographic data</td>
</tr>
<tr>
<td>17</td>
<td>Interview guide</td>
<td>Were questions, prompts, guides provided by the author? Was it pilot tested?</td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>Repeat interview</td>
<td>Were repeat interview carried out? If yes how many?</td>
<td>No</td>
</tr>
<tr>
<td>19</td>
<td>Audio/visual recording</td>
<td>Did the research use audio or visual recording to collect the data?</td>
<td>Yes, both audio and visual recording were used during this study</td>
</tr>
<tr>
<td>20</td>
<td>Field notes</td>
<td>Were field notes made during and/or after the interview of focus group?</td>
<td>Yes</td>
</tr>
<tr>
<td>21</td>
<td>Duration</td>
<td>What was the duration of the interview or focus group</td>
<td>Approximately between 1 to 1 ½ hours</td>
</tr>
<tr>
<td>22</td>
<td>Data saturation</td>
<td>Was data saturation discussed?</td>
<td>Yes</td>
</tr>
<tr>
<td>23</td>
<td>Transcript returned</td>
<td>Were transcript returned to participants for comment and correction?</td>
<td>No</td>
</tr>
</tbody>
</table>

**Domain 3: Analysis and findings**

| 24 | Number of data coders | How many data coders coded the data? | Triangulations |
| 25 | Description of the coding tree | Did author provide a description of the coding tree? | Yes |
| 26 | Derivation of themes | Were themes identified in advance or derived from the data? | The themes derived from the data |
| 27 | Software | What software, if applicable, was used to manage the data? | Manually |
| 28 | Participant checking | Did participants provide feedback on the findings? | Yes in the self-evaluation |

**Reporting**

| 29 | Quotations presented | Were participant’s quotations presented to illustrate the themes/findings? Was each quotation identified? | Yes, pseudonyms were used in each quotations |
| 30 | Data and findings consistent | Was there consistency between the data presented and the findings? | Yes |
| 31 | Clarity of major themes | Were major themes clearly presented in the findings? | Yes |
| 32 | Clarity of minor themes | Is there a description of diverse cases or discussion of minor theme? | Yes |
## APPENDIX U:
Details of the Studies of Modifiable Factors

<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>Year and type of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson, K.C. &amp; Daviss, B.A.</td>
<td>Home births with certified professional midwives: large prospective study in North America.</td>
<td>2005</td>
</tr>
<tr>
<td>Lindgren, H., I. Radestad, I.J. Christensson, K. &amp; Hildingston, I.M.</td>
<td>Outcome of planned home births compared to hospital births in Sweden between 1992 and</td>
<td>2008</td>
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<tr>
<td>Hodnett E.D, Downe S, &amp; Walsh, D.</td>
<td>Alternative versus conventional institutional settings for birth.</td>
<td>2012</td>
</tr>
<tr>
<td>Aasheim, V, Nilsen, A.B.V, Lukasse, M. &amp; Reinar, L.M.</td>
<td>Perineal techniques during the second stage of labour for reducing perineal trauma</td>
<td>2011</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Year</td>
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<tr>
<td>----------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Dahlen, H. G., Homer, C. S. E., Cooke, M.,</td>
<td>Perineal outcomes and maternal comfort related to the application of</td>
<td>2008</td>
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<tr>
<td>Upton, A. M., Nunn, R. &amp; Brodrick, B.</td>
<td>perineal warm packs in the second stage of labor: A randomized control</td>
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<tr>
<td></td>
<td>trial.</td>
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<tr>
<td>Albers, L. L., Sedler, K.D., Bedrick, E. J.,</td>
<td>Midwifery care measures in the second stage of labor and reduction of</td>
<td>2005</td>
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<tr>
<td>Teaf, D. &amp; Peralta, P.</td>
<td>perineal trauma at birth: A randomized trial.</td>
<td></td>
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<tr>
<td>Schaub, A.F., Litschgi, M., Hoesli, I,</td>
<td>Obstetric gel shortens second stage of labor and prevents perineal</td>
<td>2008</td>
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<tr>
<td>Holzgreve, W, Bleul, U. &amp; Geissbühler, V.</td>
<td>trauma in nulliparous women</td>
<td></td>
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<tr>
<td></td>
<td>perineal lacerations during birth</td>
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<tr>
<td>Geranmayeh, Mehrnaz Rezaei Habibabadi, Zahra</td>
<td>Reducing perineal trauma through perineal massage with vaseline in</td>
<td>2012</td>
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<tr>
<td>Fallahkish, Bijan Farahani, Mahdi Azizabadi</td>
<td>second stage of labor.</td>
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</tr>
<tr>
<td>Khakbazan, Zohreh Mehran, Abbas</td>
<td></td>
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<tr>
<td>Lemos A, Amorim MMR, Dornelas de Andrade, A.</td>
<td>Pushing/bearing down methods for the second stage of labour.</td>
<td>2011</td>
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<tr>
<td>de Souza A.I, Cabral Filho J.E. &amp; Correia, J.B.</td>
<td></td>
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<tr>
<td>Prins, M., Boxem, J., Lucas, C. &amp; Hutton, E.</td>
<td>Effect of spontaneous pushing versus valsala pushing in the second</td>
<td>2011</td>
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<td>stage of labour on mother and fetus: A systematic review of randomised</td>
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<tr>
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<td>Title</td>
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<td>Kemp, E, Kingswood, C.J., Kibuka, M. &amp; Thornton, J.G.</td>
<td>Position in the second stage of labour for women with epidural anaesthesia.</td>
<td>2013</td>
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<tr>
<td>Gupta, J.K., Hofmeyr, G.J. &amp; Shehmar, M.</td>
<td>Position in the second stage of labour for women without epidural anaesthesia.</td>
<td>2012</td>
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<td>Meyvis, I., Rompaey, B., Goormans, K., Truijen, S., Lambers, S., Mestdagh, E. &amp; Mistiaen W.</td>
<td>Maternal Position and Other Variables: Effects on Perineal Outcomes in 557 Births</td>
<td>2012</td>
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<tr>
<td>Hodnett, E.D, Gates, S, Hofmeyr, G.J. &amp; Sakala, C.</td>
<td>Continuous support for women during childbirth.</td>
<td>2007</td>
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<tr>
<td>Anim-Somuah, M., Smyth, R. &amp; Howell, C.</td>
<td>Epidural versus Non-epidural or no analgesia in labour.</td>
<td>2005</td>
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<tr>
<td>Simmons, S. W., Cyna, A. M., Dennis, A. T. &amp; Hughes, D.</td>
<td>Combined spinal-epidural versus epidural analgesia in labour</td>
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<tr>
<td>Costley, P. L. &amp; East, C. E.</td>
<td>Oxytocin augmentation of labour in women with epidural analgesia for reducing operative deliveries.</td>
<td>2012</td>
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<tr>
<td>Carroli, G. Mignini, L.</td>
<td>Episiotomy for vaginal birth.</td>
<td>2009</td>
</tr>
<tr>
<td>Revicky, V. &amp; Nirmal, D.</td>
<td>Could a mediolateral episiotomy prevent obstetric anal sphincter injury?</td>
<td>2010</td>
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<td>O’Mahony, F., Hofmeyr, G.J. &amp; Menon, V.</td>
<td>Choice of instruments for assisted vaginal delivery</td>
<td>2010</td>
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<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Year</td>
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<tr>
<td>Beckmann, M.N. &amp; Garett, A.A</td>
<td>Antenatal perianal massage</td>
<td>2006</td>
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<tr>
<td>Gerdin, E, Sverrisdottir, G, Badi, A., Carlsson, B. &amp; Graf, W.</td>
<td>The role of maternal age and episiotomy in the risk of anal sphincter tears and childbirth.</td>
<td>2007</td>
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<tr>
<td>Browne, M., Jacobs, M., Lahiff, M. &amp; Miller, S.</td>
<td>Perineal injury in nulliparous women giving birth at a community hospital: reduced risk in births attended by certified nurse-midwives.</td>
<td>2010</td>
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<tr>
<td>Dahlen, H. &amp; Homer, C.</td>
<td>Perineal trauma and postpartum perineal morbidity in Asian and non-Asian primiparous women giving birth in Australia.</td>
<td>2008</td>
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<tr>
<td>Soong, B. &amp; Barnes, M.</td>
<td>Maternal position at midwife-attended birth and perineal trauma: is there an association?</td>
<td>2005</td>
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<tr>
<td>Eskandar, O. &amp; Shet, D.</td>
<td>Risk factors for 3rd and 4th degree perineal tear.</td>
<td>2009</td>
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APPENDIX V:
Glossary

<table>
<thead>
<tr>
<th>Definitions of Key Terms</th>
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</thead>
<tbody>
<tr>
<td><strong>Action Research</strong></td>
</tr>
<tr>
<td>Action research is a period of enquiry which describes, interprets and explains social situations while executing a change of intervention aimed at improvement and involvement. It is a problem-focused, context specific and future-orientated. Action research is a group activity with an explicit value basis and is founded on a partnership between action researchers and participants, all of whom are involved in the change process. The participatory process is educative and empowering, involving a dynamic approach in which problem identification; planning, action and evaluation are interlinked. Knowledge may be advanced through reflection and research, and qualitative and quantitative research methods may be employed to collect data. Different types of knowledge may be produced by action research, including practical and propositional. Theory may be generated and refined and its general application explored through cycles of the action research process (Waterman, Tillen, Dickson, &amp; de Koning, 2001).</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
</tr>
<tr>
<td>The study of how knowledge is acquired and justified. Concerned with distinguishing between opinion, belief and prejudice by establishing secure foundations for knowledge, in particular with regard to the limits, truth and methods of how that knowledge came about (John Scott &amp; Gordon Marshall, 2009). Example: the description and justification for methodological decisions in research.</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
</tr>
<tr>
<td>The study of ontology and epistemology as applied to research. Put simply methodology is concerned with ‘what exists’ (Ontology) and ‘how we can reliably come to know something’ (Epistemology). Often used to refer to research methods but is principally concerned with the wider philosophy of how research is undertaken including issues of validity (J. Scott &amp; G. Marshall, 2009)</td>
</tr>
<tr>
<td><strong>Ontology</strong></td>
</tr>
<tr>
<td>The study of being or what exists. Said differently, the study of reality (Blackburn, 2008). Example: an argument for the existence of God is an ontological one.</td>
</tr>
<tr>
<td><strong>Participatory Action Research</strong></td>
</tr>
<tr>
<td>PAR is a form of action research in which researchers operates as full collaborators with members of organisation in studying and transforming those organisations. It is ongoing organisational learning process, a research approach that emphasise co-learning, participation and organisational transformation (Greenwood &amp; Levin, 2007).</td>
</tr>
<tr>
<td><strong>Practice Development Research</strong></td>
</tr>
<tr>
<td>‘Practice Development is a continuous process of developing person-centred cultures. It is enabled by facilitators who authentically engage with individuals and teams to blend personal qualities and creative imagination with practice skills and practice wisdom. The learning that occurs brings about transformation of individual and team practices. This is sustained by embedding both processes and outcomes in corporate strategy’. (Manley &amp; McCormack, 2008)p.9</td>
</tr>
<tr>
<td><strong>Research</strong></td>
</tr>
<tr>
<td>The systematic investigation of phenomena in order to make new knowledge claims and/or reach new conclusions. (Trumble &amp; Stevenson, 2003)</td>
</tr>
<tr>
<td>Science</td>
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<tr>
<td>---------</td>
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<tr>
<td>Parity</td>
</tr>
<tr>
<td>Antenatal period</td>
</tr>
<tr>
<td>Birth weight</td>
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<tr>
<td>Epidural anaesthesia</td>
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<tr>
<td>Episiotomy</td>
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<tr>
<td>Forceps delivery</td>
</tr>
<tr>
<td>Postpartum</td>
</tr>
<tr>
<td>Primara/primaparous</td>
</tr>
<tr>
<td>Primigravida</td>
</tr>
<tr>
<td>Severe perineal trauma</td>
</tr>
<tr>
<td>Tertiary referral hospital</td>
</tr>
<tr>
<td>Vacuum extraction</td>
</tr>
<tr>
<td>Concept</td>
</tr>
<tr>
<td>Empirical</td>
</tr>
<tr>
<td>Paradigm</td>
</tr>
<tr>
<td>Philosophy</td>
</tr>
<tr>
<td>Propositions</td>
</tr>
<tr>
<td>Psychophysiology</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>Theory</td>
</tr>
<tr>
<td>Long perineum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Short perineum</th>
<th>Long perineum</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Short perineum" /></td>
<td><img src="image2" alt="Long perineum" /></td>
</tr>
</tbody>
</table>
## APPENDIX X:

### Detailed Timelines for the PAR Project

<table>
<thead>
<tr>
<th>PAR Cycle 1</th>
<th>Dates</th>
<th>Phase</th>
<th>Activities</th>
<th>Data Collection Method</th>
</tr>
</thead>
</table>
|             | March 2011   | Entering the Site & Recruitment                                       | • Gaining trust and support Meeting and building relationships with key stakeholders and all midwives  
Timetable 1.doc  
• Form the core action research group | • Put up Info Notice with Photo and Brief Bio  
• Recruitment Item  
• Personal reflection |
|             | April 2011   | Assessing the Current Situation and Influencing Factors: Outcome is a Report Describing Current Situation  
Timetable 2.doc | • Action research group meetings  
• Review birth statistics  
• Focus groups of midwives | • Focus group interviews (pre)  
• Basic stats re % of genital tract trauma rates and influencing factors  
• Personal reflection |
|             | May/July 2011 | Clarification of Current Situation & Possible Improvement options  
Timetable 3.doc | • Report of Current Situation and Summary of EBP literature re Genital tract outcomes presented to:  
- Managers and senior clinicians seeking guidance and support to move ahead with planning | • Interview managers and senior clinicians about their perspective on the report and possible way forward in improving practice  
• Observation  
• Personal reflection |
<table>
<thead>
<tr>
<th>Dates</th>
<th>Phase</th>
<th>Activities</th>
<th>Data Collection Method</th>
</tr>
</thead>
</table>
| August 2011      | Planning         | • Work with Core Group to design; 1) Practice guidelines 2) Educational intervention which will result in a Power Point presentation and posters. | • Recording core group meetings  
|                  | Timetable 4.doc  |                                                                             | • Personal reflection                       |
| September 2011   | Intervention     | • Place the posters in the delivery suite  
|                  | Timetable 5.doc  | • Share the summary of EBP literature with all midwives  
|                  |                  | • Continue Action Research groups  
|                  |                  | • Lead and support core group midwives to provide the education to 70% of labour ward midwives | • Recording core group meetings  
|                  |                  |                                                                             | • Personal reflection  
|                  |                  |                                                                             | • Seminar & Workshop                        |
| January/February 2012 | Evaluation | • Review birth statistics  
|                  | Timetable 6.doc  | • Focus groups of midwives to evaluate possible improvements in the rates of genital tract trauma and/or changes to influencing factors. Evaluate the practice guideline and the educational session. | • Focus group interviews (post)  
|                  |                  |                                                                             | • Basic stats re % of genital tract trauma rates and influencing factors  
|                  |                  |                                                                             | • Personal reflection                       |
APPENDIX X:
Poster: A Review of Risk Factors of Perineal Trauma

Modifiable factors in the 2\textsuperscript{nd} stage of labour

- Adopting upright or lateral birth position
- Woman feeling loved and supported
- Giving birth with midwives
- Hands poised
- Warm compress
- Avoiding directed pushing
- Avoiding episiotomy
- Avoiding epidural and oxytocics
- No perineal massage in progress
- Restricting use of episiotomy
- Avoiding instrumental birth

Levels of Evidence for Aetiology (JBI): 1,2,3,4 &5
APPENDIX Y:

Guidelines for Promoting Normal Birth
For Nurses and Midwives at KL Maternity Hospital
I congratulate the effort to formulate Guidelines for promoting Normal Birth for Nurses and Midwives at the Kuala Lumpur Maternity Hospital. In this age of many recommended sections rules, this is an effort to formulate evidence-based guidelines so that normal births can be encouraged safely.

Midwifery practice needs a caring attitude, professionalism and teamwork among its members. Role models are essential in all fields of midwifery practice as we want what we have seen that midwifery is still a learnt as an apprenticeship. We learnt best because we remember the good points from our role models and we think back and analyse their behavior. It is their ethical behavior that would have remained in our memory over time.

I would therefore encourage midwives in Kuala Lumpur Hospital to practice their art using those guidelines. They must, however, forget the human touch and their ethical values to ensure that the experience of childbirth among women is memorable one for all the right reasons.

Dato’ Dr Ranindran Jeagarathy FRCOG
Senior Consultant and Head,
Department of Obstetrics & Gynaecology,
Kuala Lumpur Hospital

I am delighted to introduce these guidelines, which have been developed as part of a PhD by a Malaysian midwife (Siti Mariam Muda). Siti is enrolled at Southern Cross University, Australia, as her PhD supervisor. Siti has led a team of action research co-researchers who are all members of the Nursing/Midwifery Staff at Kuala Lumpur Hospital. The Action Research has been aimed at promoting normal birth with a particular emphasis on optimising perinatal outcomes for women.

These guidelines have been written in line with best available contemporary evidence. I commend these guidelines to midwives, nurses and doctors, who want to increase normal birth rates, reduce complications and improve outcomes for women and babies.

Midwives and doctors will need to be able to work collaboratively together, respecting each other’s unique skills and experience. These guidelines require midwives to make careful assessments and to be able to make home independent, evidence-based, decisions about midwifery care.

Dr Kathleen Fathy
Professor and Head of Midwifery,
Southern Cross University,
Gold Coast, Queensland, Australia
17th February, 2012

Author
Dr Kathleen Fathy
Professor and Head of Midwifery

Siti Mariam Muda RN, RM, BSc, MSc
Lecturer (Midwifery of Nursing, RM) PhD Candidate
School of Health and Human Sciences
Southern Cross University
Gold Coast, Queensland
Australia

Dedication
Dedicated to Moham Jumlah b Dahari and the Action Research Group Obstetrics & Gynaecology Department Kuala Lumpur Hospital;
KJ Rohana b. Moh Noor
KJ Noor Binti b. Amil
KJ Jamal b. Ahmad
KJ Nuri b. Sulaiman
KJ Rosani b. Zarif Adbin
KJ Noorhazmi b. Abm
KJ Noor Binti b. Ahmad
KJ Rosani b. Ab Rahman
KJ Norsah b. Ali

This book is a part of PhD project of "Optimising Pelvic Floor Outcomes for Women in Labour: An Action Research Study in Malaysia".

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Care in Active phase labour: Start the Pitocin 9
Care during First Stage Active Labour 10
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Care in the Third Stage 15
Guidelines for Promoting Normal Birth  
To Optimise Perineal Integrity for the Nurses and Midwives at  
The KL Maternity Hospital

These guidelines are based on the best available evidence and are aimed at improving midwifery care for all women by optimising women’s psychophysiology in labour and birth.

These guidelines have a particular emphasis on midwifery care for well women and babies during labour and birth so as to optimise normal birth and perineal outcomes.

What is midwifery?

The word, ‘midwife’ means ‘with woman’. Midwifery is founded on respect for women and on a strong belief in the value of women’s work of bearing and rearing each generation. Midwifery considers women in pregnancy, during childbirth and early parenting to be undertaking healthy processes that are profound and precious events in each woman’s life. These events are also seen as inherently important to society as a whole. Midwives are the experts in promoting normal birth.

Midwifery protects and enhances the health of women, which in turn protects and enhances the health the baby and the wellbeing of society. Midwifery is a woman-centred, primary health care discipline.

Midwifery:

- is holistic in its approach and, using primary health care principles, recognises the health implication of the woman’s social, emotional, physical, spiritual and cultural situation,
- the midwife works with the woman to optimise her psychophysiology during childbirth (defined below);
- recognises every woman’s right to be involved in decision-making and have choice in the care that is given to her,
- clinical reasoning and decision-making with the woman is informed by scientific evidence and
- includes collaboration and consultation with medical practitioners and other health professionals.
Optimising Psychophysiology

Psychophysiology is the disciplinary field that studies mind-body interactions and the impact of environment on how people think, feel and function physiologically (Cacioppo, Tassinary & Bernston, 2007). The term psychophysiology integrates the traditional disciplines of anatomy, physiology and psychology. For a midwife, optimising psychophysiology means to create the contextual conditions and to coach the woman so that her body, mind and spirit function in a holistic and integrated way. Only when a woman’s body, mind and spirit function optimally is her baby able to develop optimally.


Women should enter the delivery suite feeling well prepared for the environment and for their role during labour and birth. In order to be well prepared a session on optimising normal labour and birth should be added to the antenatal class program.

The Optimising Normal Labour and Birth session should be taught by a delivery suite midwife and should include the following information:

1. For primigravida; identifying latent and active labour and when to come to hospital.
2. Active labour and the benefits for the woman and the baby.
3. Pain management options: benefits and side effects.
4. Birthing positions; benefits and side effects.
5. Antenatal perineal massage.
6. Stages of labour including the 3rd stage
7. Visit to the delivery suite to reduce anxiety.

Decision about Admission to Delivery Suite

When the woman arrives at the labour ward in possible labour the midwife should conduct a full assessment including a review of antenatal care and a physical and psycho-social assessment;

1. Blood Pressure
2. Temperature
3. Pulse
4. Abdominal palpation and contraction
5. Fetal Heart Rate
6. Review Antenatal record
The first decision is to determine if the woman is in active phase labour or not.

**Decision about Active Labour**

One of the key strategies for keeping birth normal is to keep women at home in latent phase labour and not admit them to delivery suite. The delivery suite environment is clinical and alien and frequently the woman’s psycho-physiology is disrupted and her labour either stops or become in-coordinate. Only women in active phase labour should be admitted to delivery and commenced on the Partogram. Women in latent phase labour should NOT be commenced on a partogram. They may be sent home, sent to the ward or kept in the delivery suite depending upon the particular circumstances. The Table 1 below will assist with midwifery decision-making about active vs latent phase labour.

**Table 1 Comparison of Latent and Active Phase of Labour**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Latent Phase</th>
<th>Active Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractions</td>
<td>May or may not be painful</td>
<td>Are very painful</td>
</tr>
<tr>
<td></td>
<td>May be regular or irregular</td>
<td>Are regular</td>
</tr>
<tr>
<td></td>
<td>Occur less than 4 in 10 minutes</td>
<td>Are 4 in 10 or more often</td>
</tr>
<tr>
<td></td>
<td>Last less than 45 seconds</td>
<td>Last more than 45 seconds</td>
</tr>
<tr>
<td></td>
<td>Woman may be able to talk when</td>
<td>Cannot talk during contractions</td>
</tr>
<tr>
<td></td>
<td>contracting</td>
<td></td>
</tr>
<tr>
<td>Cervix</td>
<td>Less than 3 cm dilated</td>
<td>3 cm dilated or more</td>
</tr>
</tbody>
</table>

If the woman is in active labour she should start the partogram otherwise use an Observations Chart to record BP, Pulse and FHR hourly.

**Advice and Care in Latent phase labour: No Partogram**

Primiparous women in latent phase labour should stay at home, eat, rest and sleep as much as they can. They may take Panadol or warm bath for pain relief. If a woman attends the hospital in latent phase labour then, after careful assessment she should be either sent home to await active labour or transferred to the ward. Strong pain relief medication may be prescribed by the doctor and a safe sedative may also be prescribed to assist with sleep.

Multiparous women in latent phase labour should be assessed in hospital. It is more difficult to predict the duration of latent phase labour so only if the cervix is firm and undilated would it be safe to send the woman home. Induction and/or augmentation should be avoided as that increases surgical interventions and increases the rate of adverse outcomes for women and babies (Caughey. et al, 2009).
Care in Active phase labour: Start the Partogram

During admission procedures the midwife should educate the woman about:

- Active labour positions
- Drinking in labour
- Passing urine 2nd hourly sitting on a toilet or pan on chair.
- Pain relief options, benefits and side effects
- How to know when to push
- Pushing positions
- Birthing positions
- Relaxing the pelvic floor and stretching during birth
- Teach the husband about his role in supporting his wife in labour and birth
- No mobile phones to be turned on in the labour ward
- The birth is not over until the placenta is born and the uterus firmly contracted so need to stay focussed and not get distracted by the birth of the baby

During medical admission to labour ward the women and baby should be assessed for risk status. Women who are assessed as ‘low risk’ should proceed on a pathway towards normal birth under the care of midwives. Do NOT perform an ARM the membranes should rupture spontaneously. If all remains normal then the midwives should assume responsibility for assessment and decision-making when working with low-risk women who are progressing well normal labour and birth.

Care during First Stage Active Labour

Reproductive physiology works best when the body is in parasympathetic mode. Adrenaline competes with oxytocin on the uterine receptor sites; thus fear is one of the in-coordinate uterine action and failure to progress.

The psychophysiology of labour and birth happens best when the higher brain (thinking, talking) is switched off so that the lower mammalian is operating unopposed. The hormones of labour help to induce a meditative state in the woman: principally oxytocin and endorphin.

The ideal environment for birth is dim and warm so that the woman can move into this meditative state between contractions. Make sure the woman has adequate blankets and pillows.
The ideal labour ward midwife is calm, confident, positive, warm, caring and sensitive. She is well educated about labour and birth anatomy and physiology and has good clinical assessment and reasoning skills. She forms good relationships with her co-workers and communicates clearly and confidently when talking to doctors about the women in her care.

Stay silently in the room with the woman (and husband) as your presence is comforting and increases the women’s sense of safety.

**Assessing Safety and Progress in Normal Labour**

During normal labour contractions become increasingly stronger and regular. As the contractions become stronger women should be encouraged to vocalise and not feel ashamed to express the pain because feeling the need to be quiet increases the use of epidurals which are associated with much higher rates of fetal distress, forceps, vacuums and caesarean deliveries.

- Place a jug of water or cordial beside the woman with a glass and encourage her to maintain hydration and blood sugar levels. Some women prefer to drink an energy drink.

- Encourage 2nd hourly passing of urine.

- Encourage frequent position changes in bed and getting out of bed

- Encourage hip movements to facilitate pelvic opening and to support the descent of the baby.

- Maintain a regular record of the woman’s well-being and response to labour in the progress notes.

The rate of progress in normal active phase labour is defined medically by the alert and action lines on the partogram and these should be respected. (If a partogram was started before 3 cm dilated then latent phase labour should not be included in the calculation of active labour).

The midwife must:

- Perform FHR recordings every 15 minutes after a contraction and count for 60 seconds (NICE guidelines)

- Assess maternal blood pressure and pulse every four hour

- Perform abdominal palpation every two hours to assess lie, presentation, position, fingers of head palpable above the brim and position of anterior shoulder (all of which give information about descent and rotation and are therefore signs of progress).

- If membranes have ruptured take the temperature every four hours
NB: Routine vaginal examination for dilation, descent and position of the fetal head are not indicated if all other signs of progress are good. At least fourth hourly, the midwife should inform the doctor of progress. If a vaginal examination is indicated at any stage during normal labour the midwife who is caring for the woman should conduct it and report her findings. An ARM should never be performed without a good clinical reason.

When is labour no longer ‘normal’?

If there is meconium stained liquor then the doctor is informed and continuous CTG is commenced. If the CTG is normal it may be permissible to remove the CTG for 20 minutes each hour to allow the women to be active and thus increase the chance of a normal birth.

If any abnormalities arise e.g. bleeding more than 2nd stage ‘show’ or maternal hypertension or fever or epidural, then labour is no longer normal responsibility should be transferred to the doctor with the midwife continuing to optimise the opportunity for normal labour and birth regardless of risk status.

Care in Second Stage Normal Labour

Continue all care as described as in 1st stage labour except FHR is now recorded every 5 minutes for 60 seconds (at the end of a contraction).

Identify whether second stage labour is ‘passive’ or ‘active’.

In passive second stage the cervix is fully dilated but the woman has no urge to push and the head is at or near the level of the spines. The fetal head has not rotated into the AP diameter of the outlet.

In active second stage women in normal labour will push spontaneously and usually will NOT hold their breath as in directed pushing. The midwife needs to be encourage and supportive of the woman’s spontaneous efforts and resist the urge to give instructions.

For a primipara, in normal labour with a healthy fetus, the passive 2nd stage can last for up to one hour without this being abnormal. During this time the woman should be resting sometimes and upright and active sometimes. Aim to keep the bladder empty. **DO NOT ENCOURAGE PUSHING** as this causes deep transverse arrest, maternal exhaustion and increases forceps, vacuum and caesarean births.

Upright pushing positions are the most effective because gravity is assisting the woman and baby. In second stage, in particular, the aim is to be active; to keep moving. When working with a primiparous women in particular suggest to her that she may like to try some or all of the following ways of pushing:

- standing and pushing down on the bed with her hands
- on her knees with her elbow over the back of the raised bed head.
- squatting pushes
- lunging pushes
- Sit on husband’s open knees/thighs with the husband is sitting on a chair so he can support his wife’s
Care during the Birth

The midwife should:

1. Encourage woman to empty her bladder

2. Be sure to have good verbal communication directly with the woman and be sure she knows how you will guide her during the birth of the head to optimise perineal outcome

3. Put the hospital gown on with the opening to the front so that the baby can be placed skin-to-skin immediately after birth

4. Support the woman to adopt the birth position which feels right for her. Upright or semi-upright is best for primiparous and left lateral is best for preventing precipitous birth for a multiparous woman

5. Invite a second midwife (or a doctor) to be present and assist at birth of the baby and for syntocinon in 3rd stage (not to coach the woman or give instructions)

6. Birth is a clean procedure (not a surgical procedure). Sterile gown is not needed. Clean hands, sterile gloves mask and a sterile labour pack are used.

7. There should be NO episiotomy scissors on a normal birth pack. If the midwife needs the scissors there MUST be an indication e.g. fetal distress and then she should call for them to be brought to her. Episiotomy increases the risk of 3rd and 4th degree tear.

8. Place a warm wet pad over the anus and the lower part of the perineum for support and comfort. Replace every few minutes (the assistant can help with bringing you the pads).

9. Avoid pushing or poking the perineum (no chinning, no perineal massage and stretching of the perineum or vagina as this may damage the stretched muscle fibres leading to perineal trauma)

10. When the head is advancing tell the woman and encourage her to relax her pelvic floor muscles and let her perineum stretch – contracting or holding back increases risk of trauma

11. If you observe that the perineum looks like it will tear consider:
   a. Changing position to left lateral
   b. Calmly asking the woman to pant and stop pushing
   c. Encouraging gentle pushing between contractions
Remember, you cannot prevent all tears; some women will tear no matter how much care you take. Just be sure that the research evidence is clear that an episiotomy does not prevent 3rd and 4th degree tears and guarantees perineal trauma.

12. Do NOT check for the cord around the neck (nuchal cord).
   If there is cord around the neck as the baby is being born aim to maintain an intact cord if possible (slip the loop/s over the baby’s head)

13. If the cord is long enough just birth the baby with the cord around the neck and up-loop after birth.

14. Only in extreme circumstances clamp and cut the cord as you are cutting off the baby’s lifeline of oxygen and to ensure that all the baby’s blood is received by the baby (MacDonald, 2011)

Care in the Third Stage

1. As soon as the baby is fully born place the wet baby directly onto the skin of the woman (any material in between will cause the baby to get cold). Cover the mother and baby with sufficient warm towels/blankets.
2. Suctioning the healthy baby is not needed and may reduce PO₂ and increase PCO₂
3. Assess Apgar Score
4. Leave the cord intact until it stops pulsating (2-3 minutes)
5. Do NOT announce the sex let the parents find out in their own time.
6. Remind the woman and her husband that the birth is still progressing; do not announce the birth of the baby to anyone in the family until after 3rd stage is complete
7. Give the syntocinon within 1 minute of the birth of the baby.
8. Conduct controlled cord traction to deliver the placenta.
9. Rub the fundus to ensure hard and contacted and bleeding minimal.
10. Keep the woman and baby skin to skin for one hour and closely observe baby’s colour/tone etc.
11. If at all possible, stay in the room with the woman and baby whilst writing your notes.
12. Support self-attachment breastfeeding (consider helping the woman to a side-lying position but keep your hands off the breastfeeding)
14. After one hour or earlier encourage woman to empty her bladder.
15. Offer food and warm drink to woman and her husband.
16. Baby can now go for injections and hygiene/dressing.
17. Assist the woman with hygiene
APPENDIX Z:

Content Analysis

**Individual interview**

**Q: What do senior staff believe is preventing clinicians from doing more to prevent perineal trauma?**

<table>
<thead>
<tr>
<th>Direct Quotes</th>
<th>Initial Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whenever you want to introduce something new, let’s say, based on evidence, you find that is not easy to change overnight. You meet some resistance from those who are used to the old ways. We have to educate them to make them realise why it is necessary to change and then I find better acceptability.</td>
<td>Not easy to change people</td>
</tr>
<tr>
<td>This a training hospital. We always have people coming all the time. So you may have train well a group of people and if they remain with you and continue to practice then you will find very optimum of the outcomes but because we have keep training these people you will find the outcome may not be optimised once desired</td>
<td>People come and go</td>
</tr>
<tr>
<td>..one of the barriers I think, comes from the person resistant to change, but the other hand, all of them are very keen to learn</td>
<td>Person resistant to change</td>
</tr>
<tr>
<td>…we are limited by our facility like that..</td>
<td>Facility not well equipped</td>
</tr>
<tr>
<td>..we are rushing….nurses/midwife need to do their routine faster and have to shortcut the procedure …..</td>
<td>Rushing/Busy</td>
</tr>
<tr>
<td>…what happens,(to the woman’s perineum) depends on doctor order…</td>
<td>Follow doctor’s orders</td>
</tr>
<tr>
<td>..we do not practice left lateral positioning ….some mother refused to do so…and sometimes we are not comfortable with that position…</td>
<td>Nurses and mothers and feel uncomfortable with other position other than what normally do i.e. recumbent</td>
</tr>
<tr>
<td>…..we nurses/midwives can do an episiotomy to speed up the birth so as to avoid unnecessary forceps or vacuum</td>
<td>Speed up the birth so it is normal</td>
</tr>
<tr>
<td>..Student booked primigravida mother and need to learn how to perform episiotomy…</td>
<td>Student need to learn how to do episiotomy</td>
</tr>
<tr>
<td>We cannot reduce epi rate because student need to learn..</td>
<td>Student need to learn</td>
</tr>
<tr>
<td>It is not our culture to follow others birth positioning except lithotomy and recumbent…</td>
<td>Not our culture</td>
</tr>
<tr>
<td>..mother cannot push during lateral because the baby head will stuck..</td>
<td>Lack of knowledge</td>
</tr>
<tr>
<td>..room environment is not suitable for mother to give birth in other position…</td>
<td>Wrong birth environment</td>
</tr>
</tbody>
</table>
..bed is not suitable to give birth other than normal position…
Wrong birth environment

..labour ward is small and crowded with equipment so women can’t move from bed
Wrong birth environment

..we have small room for women in labour…
Wrong birth environment

Some nurses/midwives preferred to practice what they are doing now…
Staff attitude

..it is not suitable for women in Malaysia..
Not our culture

### Categories

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to change (including not our culture/staff attitudes/recumbent position is normal here,)</td>
<td>7</td>
</tr>
<tr>
<td>Busy medicalised environment (staff rushing/busy, lack of stable staff, students needing to practice, need to speed up birth, rely on doctors’ orders)</td>
<td>10</td>
</tr>
</tbody>
</table>

### Q: What do senior staff believe would need to change in order to reduce perineal trauma rates?

<table>
<thead>
<tr>
<th>Direct Quotes</th>
<th>Initial Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>…..we have to educate them to make them realise why it is need to change..</td>
<td>Staff Training</td>
</tr>
<tr>
<td>you need to advocate antenatal education in terms of the care of the perineum of the pelvic floor and the preparation of childbirth during</td>
<td>Antenatal education</td>
</tr>
<tr>
<td>the policy of selective episiotomy and advocated that episiotomy rate in any hospital should not be more than 30%.</td>
<td>Policy of episiotomy</td>
</tr>
<tr>
<td>..we are trying now whether we can improve education and supervision to control the number of this trauma</td>
<td>Improve education and supervision</td>
</tr>
<tr>
<td>send as many people as possible to attend courses outside.. ..</td>
<td>External course for staff</td>
</tr>
<tr>
<td>..we make sure people go and take part in the major conferences in the whole country</td>
<td>It is not our fault</td>
</tr>
</tbody>
</table>
and I’m happy to say that the budget is enough..we always have a budget..i don’t have a constraint of budget

We have enough budget

massage the perineal during labour to soft the part….

We should teach perineal massage

..put cream or oil so as to soft the perineum part..

We should moisturise the perineum

…need to educate mother how to push appropriately during antenatal not during birth..

Educate the woman to push better

..antenatal perineal massage

Antenatal perineal massage

..encouraged staff to teach mother during antenatal…

Antenatal education

…perineal massage during antenatal..

Antenatal perineal massage

…educate mother how to do antenatal perineal massage..

Antenatal perineal massage

..communication between staff and patient..

Communication

…equipment in the room should be fully complete..

Upgrade facility - equipment

…room should be bigger than now…so women can have a chance to walk around the bed.

Upgrade facility - room

Staff need to increase their knowledge…

Upgrade Staff knowledge

Senior staff should supervise the junior

Supervision

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve staff education and supervision</td>
<td>X 7</td>
</tr>
<tr>
<td>Improve woman’s education about birthing</td>
<td>X2</td>
</tr>
<tr>
<td>Implement evidence-based practice re episiotomy rates</td>
<td>x1</td>
</tr>
<tr>
<td>Perineal massage/lubricant in labour</td>
<td>X2</td>
</tr>
<tr>
<td>Antenatal perineal massage (with oil)</td>
<td>X4</td>
</tr>
<tr>
<td>Upgrade facility</td>
<td>X2</td>
</tr>
</tbody>
</table>
Content Analysis Focus Groups

Q: What is the major cause of perineal trauma?

<table>
<thead>
<tr>
<th>Direct Quotes</th>
<th>Initial Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language problem…not understand command from midwives..(2 agreed)</td>
<td>Language barrier</td>
</tr>
<tr>
<td>Need to lift the buttock during pushing..</td>
<td>Lift the buttock</td>
</tr>
<tr>
<td>Mother with the high and thick perineum</td>
<td>Thick perineum</td>
</tr>
<tr>
<td>Not guarding the perineum properly during birth..</td>
<td>No guard the perineum</td>
</tr>
<tr>
<td>Big baby more than 4 kg..(4 agreed)</td>
<td>Big baby</td>
</tr>
<tr>
<td>..faster birth..baby out when mother pushing</td>
<td>Precipitate labour</td>
</tr>
<tr>
<td>Thick and long perineum (3 agreed)</td>
<td>Thick perineum</td>
</tr>
<tr>
<td>Staff rushing and no proper instruction to mother</td>
<td>Lack of skill</td>
</tr>
<tr>
<td>Primigravida need episiotomy</td>
<td>Primiparous mother</td>
</tr>
<tr>
<td>skill and technique of the people who conduct the birth (2 agreed)</td>
<td>Lack of skill</td>
</tr>
<tr>
<td>..foreigner for example from Vietnam and Myanmar</td>
<td>Language barrier</td>
</tr>
<tr>
<td>..long perineum</td>
<td>Thick perineum</td>
</tr>
<tr>
<td>Mother lifted her buttocks</td>
<td>Lift the buttocks</td>
</tr>
<tr>
<td>..not understand what midwives ask to do…</td>
<td>Language barrier</td>
</tr>
<tr>
<td>No guarding the perineum when baby comes out</td>
<td>No guard the perineum</td>
</tr>
<tr>
<td>Restless and move the buttock when baby’s on perineum</td>
<td>Lift the buttocks</td>
</tr>
</tbody>
</table>

Categories

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language barrier</td>
<td>X5</td>
</tr>
<tr>
<td>Lift the buttock</td>
<td>X3</td>
</tr>
<tr>
<td>Thick perineum</td>
<td>X6</td>
</tr>
<tr>
<td>Not guard the perineum</td>
<td>X2</td>
</tr>
<tr>
<td>Big baby</td>
<td>X5</td>
</tr>
<tr>
<td>Precipitate labour</td>
<td>X1</td>
</tr>
<tr>
<td>Lack of clinician skill</td>
<td>X4</td>
</tr>
<tr>
<td>Primiparous mother</td>
<td>X1</td>
</tr>
</tbody>
</table>
Q: How can perineal trauma be prevented?

<table>
<thead>
<tr>
<th>Direct Quotes</th>
<th>Initial Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation during antenatal check-up/visit. Let mother know that birth is a pain.</td>
<td>Antenatal education</td>
</tr>
<tr>
<td>Ask mother not restless and not to lift the buttock (4 agreed)</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Push when os fully dilated. (2 agreed)</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Assess the skin of perineum while mother in labour in order to proper support the perineum..</td>
<td>Staff knowledge</td>
</tr>
<tr>
<td>Massage the skin of perineum during labour and put more oil to soften the skin and stretchable..</td>
<td>Perineal massage Perineal massage</td>
</tr>
<tr>
<td>Assess the skin of perineum and assess the baby weight in order to know the requirement of episiotomy..</td>
<td>Staff knowledge</td>
</tr>
<tr>
<td>Put more cream…</td>
<td>Put lubricant</td>
</tr>
<tr>
<td>Stretch the perineum and gentle sweep with oil</td>
<td>Put lubricant</td>
</tr>
<tr>
<td>Guard properly and protect the perineum and clitoris..(2 agreed)</td>
<td>Guard the perineum</td>
</tr>
<tr>
<td>Ask mother to push only when contraction..</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Listen to midwives and not to push one off..remind mother during os fully</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Not to lift the buttock….</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Put oil.. (4 agreed)</td>
<td>Put lubricant</td>
</tr>
<tr>
<td>Flexed the baby head down when emerge..</td>
<td>Guard the perineum</td>
</tr>
<tr>
<td>Protect and guard the perineum until baby out (2 agreed)</td>
<td>Guard the perineum</td>
</tr>
<tr>
<td>Sweep and stretch gently the perineum so as stretchable…</td>
<td>Perineal massage</td>
</tr>
<tr>
<td>Assess the perineum..thick or thin for episiotomy</td>
<td>Episiotomy</td>
</tr>
<tr>
<td>Teach pregnant women to perform pelvic floor exercise during antenatal period to avoid tear during birth..</td>
<td>Antenatal education on pelvic floor</td>
</tr>
<tr>
<td>Nurse/midwives should cooperate with each other</td>
<td>Cooperation</td>
</tr>
<tr>
<td>To do an episiotomy for thick perineum..</td>
<td>Episiotomy</td>
</tr>
</tbody>
</table>
To put oil as much as you can…  
Put lubricant

Cooperation of midwives and mother (2 agreed)  
Cooperation

Proper guide the perineum  
Staff skill

Mentally prepare before going to birth process  
Antenatal education

Slow and steady…  
Staff skill

Skill and knowledge is important (3 agreed)  
Staff knowledge

### Categories

<table>
<thead>
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<th>Frequency</th>
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<tbody>
<tr>
<td>Antenatal education</td>
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<tr>
<td>Cooperation</td>
<td>X11</td>
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<tr>
<td>Staff knowledge</td>
<td>X6</td>
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<tr>
<td>Perineal massage</td>
<td>X1</td>
</tr>
<tr>
<td>Put lubricant</td>
<td>X9</td>
</tr>
<tr>
<td>Guard the perineum</td>
<td>X7</td>
</tr>
<tr>
<td>Perineal massage</td>
<td>X1</td>
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<tr>
<td>Episiotomy</td>
<td>X2</td>
</tr>
<tr>
<td>Staff skill</td>
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## APPENDIX 1:
### STATISTIC OF PERINEAL TRAUMA KL HOSPITAL 2012

<table>
<thead>
<tr>
<th>MONTH</th>
<th>TOTAL BIRTH &amp; TYPE OF BIRTH</th>
<th>EPISIOTOMY</th>
<th>1ST DEGREE TEAR</th>
<th>2ND DEGREE TEAR</th>
<th>3RD DEGREE TEAR</th>
<th>4TH DEGREE TEAR</th>
<th>*OTHER TEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOTAL</td>
<td>PRIMI</td>
<td>MULTI</td>
<td>TOTAL</td>
<td>PRIMI</td>
<td>MULTI</td>
<td>TOTAL</td>
</tr>
<tr>
<td></td>
<td>SVD</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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<tr>
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*Other Tear=episiotomy with extended tear, vaginal tear, labia tear and cervical tear