

**Suturing versus non-suturing of spontaneous perineal  
tears following normal birth:  
Factors that influence the practice of  
New Zealand/Aotearoa midwives.**

By

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## Abstract

**Rationale:** Perineal trauma following birth can have a profound effect on a woman's biological, psychological, and emotional health. There is debate on whether or not to suture perineal tears. Research is limited relating to midwifery decision making on the topic and is sparse from a New Zealand context.

**Study aim:** The aim of this study is to describe the degree of influence of specific factors on midwives' decisions to either suture or not suture spontaneous perineal tears following normal birth.

**Design:** This descriptive study used survey methodology. A randomly selected sample of 400 midwives from the New Zealand College of Midwives was sent a postal survey over a seven week period in May 2009. Analysis was performed using Statistical Package for the Social Sciences (SPSS, version 17, Chicago).

**Results:** 216/400 (54%) questionnaires were completed and returned. Three clinical characteristics, the depth of the tear, amount of bleeding and alignment/apposition of the tear, had a considerable influence on both midwives decision to suture and not to suture, as did the midwives own practice experience confidence in identification of the tear, confidence in repair technique, evidence from research, previous perineal outcome and woman's general health and wellbeing. Woman's choice also had considerable influence on the midwives decision not to suture. Time restraints, peer pressure and place of birth had little influence on either decision. Years in practice impacted on the influence of many factors: confidence in the repair technique on the decision to suture ( $p=0.04$ ) and not to suture ( $p=0.03$ ); midwives' reported confidence levels in the repair of a first degree ( $p=0.01$ ), second degree ( $p=0.04$ ), branching/complex ( $p=0.03$ ), or labial tear ( $p=0.05$ ); time restraints on the decision to suture ( $p=0.05$ ); and practice experience on the decision not to suture ( $p=0.04$ ). Main work types impacted on the influence that hospital policies had on the decision to suture ( $p=0.02$ ) and not to suture the perineal tear ( $p<0.001$ ), the woman's previous perineal outcome on the decision not to suture ( $p=0.05$ ) and the midwives reported confidence levels in the repair of a second degree tears ( $p=0.03$ ) and branching/complex tear ( $p=0.002$ ).

**Conclusion:** New Zealand midwives were primarily influenced by the clinical characteristics of a spontaneous perineal tear in their decision to suture or not to suture, but factors such as practice experience, confidence in identification and repair, evidence from research, the women's health and wellbeing and the woman's choice also impacted on decisions and were commonly part of the decision-making

process. Years in practice and main work type of the midwife had an impact on some but not all factors. Environmental factors such as place of birth, time and peer pressure were not important influences.

This study demonstrates that New Zealand midwives view their decisions as their own professional responsibility suggesting autonomous decision-making. Importantly, midwives used a holistic approach to navigate their way through the complexity of the decision-making process. Professional development or education on the topic needs to provide opportunities for midwives to explore the complexity of factors that may influence decisions regarding suturing or non-suturing of spontaneous perineal tears.

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## Chapter One: Introduction

Perineal care for women following childbirth is a topic of international debate within the maternity setting. Controversy regarding the best management of perineal trauma, relating to suturing following childbirth, has continued throughout the centuries (Kettle, 2006b). Perineal trauma following birth can have a profound effect on a woman's biological, psychological, and emotional health. Many women who give birth vaginally, experience some degree of perineal tear/trauma either because of spontaneous tearing during physiological labour and birth or by surgical incision; an episiotomy. Perineal trauma and its repair are strongly associated with postnatal morbidity such as bleeding, infection, pain, urinary and faecal incontinence and sexual dysfunction (Albers, Garcia, Renfrew, McCandlish, & Elbourne, 1999; Sleep, 1991). Many women suffer unnecessarily, often in silence (Sleep, 1991).

Historical literature suggests that the earliest evidence of severe perineal injury sustained during childbirth was found in the mummy Henhenit, a Nubian woman approximately twenty-two years old, from the harem of King Mentuhotep 11, of Egypt 2050 BC (Kettle, 2006b). The actual procedure of suturing has been promoted in ancient midwifery and obstetric writings (Kettle, 2006b; Spendlove, 2005). Various methods and materials have been used throughout the centuries and the practice of repair of perineal tears has been documented since 1540, when pieces of linen cloth were stuck to each side of the perineal wound and then stitched together (Kettle, 2006b). Up until the nineteenth century women were confined to bed for up to six weeks and nursed on their side with their legs tied together to encourage healing by secondary intent (Kettle, 2006b). In the early 1900s metal clips were used to close the perineal wound. The clips caused considerable pain for women and increased postpartum infection, particularly as crude equipment was used and the concept of utilising aseptic techniques was limited (Kettle, 2006b; Kindberg, 2008).

Historically, the practice of suturing all episiotomies has been routine; however, the practice following spontaneous perineal tears is not as clear or consistent. Whilst research regarding suturing or not suturing of perineal tears exists, it has predominately focused on the healing of perineal wounds, the effects of perineal pain and postpartum morbidity for women (Fleming, Hagen, & Niven, 2003; Kettle, Hills, & Ismail, 2007; Langley, Thoburn, Shaw, & Barton, 2006; Lundquist, Olsson, Nissen, & Norman, 2000). However there is a scarcity of studies which have

explored the influences that may affect the decision-making of midwives regarding suturing or non-suturing of perineal tears.

Literature from the United Kingdom suggests that since early 1990 there has been an increasing trend among midwives not to suture some second-degree tears that would have previously been repaired (Clement & Reed, 1999; Head, 1993). However, there has been little evidence to support this apparent change in practice (Gomme, Yiannouzis, & Ullman, 2001; Langley et al., 2006). Further literature from the United Kingdom, Europe, Australia and the United States of America suggests that the practice of non-suturing of second-degree tears may have resulted from midwives' limited knowledge during assessment of the perineal tear and limited knowledge of repair techniques (Fleming et al., 2003; Lundquist et al., 2000; McCandlish, Sandland, Horey, & Brocklehurst, 2001).

Reviewing the literature highlights the complexity of this topic. Research on the long-term effects for women, both physical and psychological have been noticeably absent and it is only in recent studies that these long-term effects have been explored (Clement & Reed, 1999; Fleming et al., 2003; Head, 1993; Lundquist et al., 2000; McCandlish et al., 2001). However researchers are now exploring factors that might influence midwives in the decision to suture or not to suture perineal tears (Cioffi, Swain, & Arundell, 2008; Spendlove, 2005) and not just that of the clinical characteristics of the perineal tear. Considering all women in New Zealand have a midwife at their labour and birth, it is expected that midwives in New Zealand are more likely to be the health professional assessing a woman's perineum following a normal birth. From a New Zealand context, there is an absence of published literature on the topic of perineal care, and therefore the purpose of this thesis is to explore factors that influence midwives in their decision-making and place New Zealand midwifery practice within the context of international research on the topic.

### **1.1 Influence of my own practice on this study**

Throughout my Master of Midwifery pathway I have chosen to focus on perineal outcomes for women and the implications for midwifery practice. I chose this topic after I reflected on my own practice as a midwife whilst practising in the United Kingdom and New Zealand. I started to question my own knowledge and decision-making regarding perineal care and sought more information to support my practice.

As I moved into education it became obvious to me that other midwives were also searching for the same information and thus my study pathway began.

For the past ten years I have been engaged in providing continuing educational opportunities for midwives, which is a personal passion and privilege. Over the years I have developed and taught perineal assessment and repair workshops which proved to be highly popular. The stories described by midwives undertaking the education indicated that each decision they made regarding perineal care after birth was different from the last. It appeared that they based their decisions on the individual circumstances of the woman and used their own practice experiences to aid with their decision-making. As the midwives described numerous factors that influenced and supported their decision-making my own interest in exploring the topic grew immensely.

I am currently employed as the Continuing Education Advisor at the New Zealand College of Midwives. My role is to support and develop educational opportunities for midwives in New Zealand and highlight best practice. It surprised me to find the scarcity of research on the topic from the New Zealand/Aotearoa context. I soon realised that I wanted to find out more about the factors that influence our practice.

## **1.2 Aim of the study**

To my knowledge there is no New Zealand research which has explored factors that influence midwives in their decision to either suture or not suture spontaneous perineal tears after childbirth. Therefore this study is designed to fill that gap and contribute to the understanding of influences on New Zealand midwives' decision-making about whether or not to suture spontaneous perineal tears.

The aim of this study is:

- To gain an understanding of factors that influence decision-making for New Zealand midwives in relation to suturing versus non-suturing of spontaneous perineal tears following normal birth.

## **1.3 Overview of the thesis chapters**

This thesis is divided in five chapters. *Chapter one* has presented an introduction to the topic and my own rationale for undertaking the study.

*Chapter Two* presents an overview of perineal care in New Zealand today and sets the context for this study. It explores the international literature relating to suturing and non-suturing of perineal tears. This chapter explores the consequences for women's health and the impact of midwifery decision-making of suturing or non-suturing for women.

*Chapter Three* presents the rationale for choosing the methodological framework underpinning this research. It describes the ethical implications, data collection process and methods of data analysis utilised in this study.

*Chapter Four* presents the descriptive analysis of the survey data and describes the response rates and demographic data. Factors that influenced midwives in their decision to suture or not to suture are described and midwives views of their knowledge and confidence are reported.

*Chapter Five* discusses the results and findings of the study. The limitations of the research are examined and the implications for midwifery practice and future research are considered.

## **Chapter Two: Background and Literature Review**

### **2.0 Introduction**

This chapter presents the background and literature review of suturing and non-suturing of perineal tears. It includes an overview of current midwifery perineal care in New Zealand/Aotearoa and sets the context for this study. It explores outcomes for women and highlights the significance of the topic from a New Zealand perspective.

Cioffi et al., (2008) state that in midwifery practice, ongoing controversy exists regarding whether or not perineal and associated trauma should be sutured. The general aim of suturing perineal lacerations is to restore vital functions of the perineal body and to secure wound healing by primary intention which is achieved when wound edges are brought together by the action of suturing (Boyle, 2006a). Wounds will also heal by the physiological process called secondary intention where the wound heals by means of granulation causing the wound to contract. However this process may increase scar formation and produce longer healing times (Boyle, 2006b).

An extensive literature search was conducted which included primary sources, journals, texts and data bases; CINAHL, Medline and Cochrane. The search identified studies related to suturing versus non-suturing; midwifery practice, knowledge and confidence regarding perineal care; suturing techniques; women's experiences of perineal lacerations following birth. No date limits were used because I wanted to ensure that all historical literature on the topic was obtained.

### **2.1 Placing the research in the context of New Zealand/Aotearoa Midwifery Practice**

The context of New Zealand midwifery practice and philosophy is underpinned and described in *The Midwifery Partnership Model: A model for practice* (Guilliland & Pairman, 1995) which is the philosophy of midwifery practice within New Zealand. In 1990 an Amendment to the Nurses Act 1977 ("The Nurses Amendment Act ", 1990) re-established midwifery as a profession in its own right, distinct from the nursing profession which enabled midwives to practice autonomously. This enabled

midwives to work fully within their Scope of Practice which provides the broad boundaries of midwifery practice.

*The midwife works in partnership with women, on her own professional responsibility, to give women the necessary support, care and advice during pregnancy, labour and the postpartum period up to six weeks, to facilitate births and to provide care for the newborn.*

*The midwife understands, promotes and facilitates the physiological processes of pregnancy and childbirth, identifies complications that may arise in mother and baby, accesses appropriate medical assistance, and implements emergency measures as necessary. When women require referral midwives provide midwifery care in collaboration with other health professionals.*

*Midwives have an important role in health and wellness promotion and education for the woman, her family and the community. Midwifery practice involves informing and preparing the woman and her family for pregnancy, birth, breastfeeding and parenthood and includes certain aspects of women's health, family planning and infant well-being.*

*The midwife may practise in any setting, including the home, the community, hospitals, or in any other maternity service. In all settings, the midwife remains responsible and accountable for the care she provides. (MCNZ, 2005b)*

In 2003, the introduction of the Health Practitioners Competence Assurance Act (HPCA Act) saw the development of the first Midwifery Council of New Zealand (MCNZ). The public expects health practitioners to be competent and safe and the HPCA Act is a response to that fair and reasonable expectation (MCNZ, 2009b). As the regulatory body for New Zealand midwives the MCNZ define the minimum competence standards for registration. There are four Competencies for Entry to the Register of Midwives (MCNZ, 2005a). These provide the details of how a registered midwife is expected to practice regardless of the midwife's main work type. Competency Two relates to this research.

Competency Two states that a competent midwife integrates knowledge and clinical skills within a legal and ethical framework and that the actions of the midwife are directed towards a safe and satisfying outcome. It also states that the midwife utilises midwifery skills that facilitate the physiological processes of childbirth and balances these with the judicious use of intervention when appropriate. It is this competency that relates to the midwives' practice with regards to decision-making of whether or not to suture spontaneous perineal tears and the implications for midwives' actions (MCNZ, 2005a).

Competency Two:

*“The midwife applies comprehensive theoretical and scientific knowledge with the affective and technical skills needed to provide effective and safe midwifery care.”*  
(MCNZ, 2005a)

The maternity service in New Zealand is an integrated system of primary, secondary and tertiary maternity care (NZCOM, 2009). The New Zealand model of maternity care enables midwives to choose their own employment and practice setting. Self-employed case-load or Lead Maternity Carer (LMC) midwives provide women with continuity of care throughout their pregnancy, labour and birth, and postnatal period and provide primary maternity care (*New Zealand Public Health and Disability Act 2000*). There are approximately 681 self-employed caseload midwives who can be selected by women to provide care as their LMC (MOH, 2009).

District Health Board's (DHB) provide primary, secondary and tertiary maternity facilities. Midwives employed by the DHB, provide the core services between primary and secondary settings and support their self-employed midwifery colleagues and thus support a complete maternity service to childbearing women (NZCOM, 2009). There are approximately 1083 core midwives employed within DHB's to work rostered shifts and approximately 140 midwives employed within the DHB to provide continuity of care as caseload midwives (MOH, 2009).

Midwives can also be employed as educators, lecturers, midwifery advisors and managers in DHB's, non-governmental organisations (NZCOM) and educational institutions. Despite the midwives' chosen place of practice, all midwives are required to hold an Annual Practicing Certificate, meet the same competencies

(MCNZ, 2005b) and practice within the same Scope of Practice, Code of Ethics and Standards of Practice (NZCOM, 2008a)

The New Zealand model of maternity care enables women to choose to give birth at home, primary maternity facilities or secondary/tertiary maternity hospitals (NZCOM, 2009). Midwives practice in urban, rural and remote rural locations of New Zealand and provide care to women in these locations.

However, regardless of the midwives chosen place of practice, midwives require an extensive knowledge of anatomy and physiology relating to pregnancy and childbirth. This helps them to meet their required competencies and provides knowledge to underpin their clinical decision-making. A brief section on anatomy and physiology and descriptions of classifications of perineal trauma is included to provide the reader with an understanding of terminology used throughout this thesis.

## **2.2 Anatomy of the pelvic floor and classifications of perineal lacerations**

The anatomy of the female pelvic floor is complex, but nevertheless it is extremely important that midwives have a sound understanding of the structures (Kettle, 2006a). It is vital that midwives have knowledge and an understanding of the changes of the pelvic floor that occur during pregnancy and childbirth. This knowledge is crucial for midwives to aid them in their assessment of the perineal body following birth and in particular in their decision-making regarding suturing or non-suturing of spontaneous perineal tears.

The female perineal body was first named in 1889 and its three-dimensional form has been likened to that of a pine cone, with each petal representing an interlocking structure of the perineal body (Woodman & Graney, 2002). The term *pelvic floor* describes the structures that fill the outlet of the bony female pelvis (Hendy, 2006). The pelvic floor is comprised of a complex group of structures, which include muscles, ligaments and connective tissue which all form a hammock-shaped structure with two layers of muscles, deep and superficial (Wylie, 2005). The main functions of the female pelvic floor are to support the internal pelvic and abdominal organs and maintain the integrity of the bladder, uterus, vagina and rectal function (Hendy, 2006).

The perineal body is flattened and displaced during birth and the muscles of the pelvic floor aid the expulsive action of the birth canal to birth the baby. Trauma can occur to any part of the internal or external genitalia and can be either accidental, a spontaneous tear/laceration or deliberate, an episiotomy (Jackson, 2000). Diagnosis of perineal trauma after childbirth is classified according to the involvement of anatomical structures. The four categories which have been classified by obstetricians, range from a first to fourth degree tear and include superficial lacerations of the skin and involvement of muscles and rectal mucosa (Hendy, 2006; Sultan, Kramm, Bartram, & Hudson, 1994; Kettle, 2006a; Kindberg, 2008; RCOG, 2004) (Table 2.1). In addition, in order to standardise descriptions of more complex anal sphincter injury further modifications to the classification of a third degree tear have been made by Sultan (1999). Laceration sites associated with childbirth however can include not only perineal and vaginal sites but also outer vaginal tears such as labial, clitoral and rectal sites (Albers et al., 1999). The main aim of the classifications is to support practitioners in their assessment of perineal structures involved and to aid decisions regarding the optimal management of the trauma (NICE, 2007). Despite these definitions the identification and assessment of the degree of perineal trauma still remains a complex process.

Table 2.1. *Classification of perineal lacerations after birth* (NICE, 2007)

<b>Degree of perineal trauma</b>	<b>Anatomical structures involved</b>
First degree	Injury to skin only
Second degree	Injury to perineal muscle but not the anal sphincter
Third degree	Injury to the perineum involving the anal sphincter complex: <ul style="list-style-type: none"> <li>• 3a – less than 50% of external anal sphincter thickness torn</li> <li>• 3b – more than 50% of external anal sphincter thickness torn</li> <li>• 3c – internal anal sphincter torn</li> </ul>
Fourth degree	Injury to the perineum involving the anal sphincter complex (external and internal anal sphincter) and anal epithelium

### **2.3 Perineal outcomes for women in Aotearoa/New Zealand**

Morbidity associated with perineal injury relating to childbirth constitutes a major worldwide health problem. It has been suggested that perineal trauma is the most common complication of childbirth (Langley et al., 2006). Although it is difficult to gauge worldwide statistics, Bick et al., (2010) suggest that perineal trauma affects around 85% of women who have a vaginal birth in the United Kingdom every year.

There are approximately 350,000 women who require repair of perineal lacerations annually in the United Kingdom and of these 20% have long term problems (Kettle et al., 2002). Women in Australia have similar outcomes, with 66% of women experiencing some form of perineal trauma and according to Dahlen and Homer (2008) and a large number of these women require perineal suturing.

According to the New Zealand Health Information Service Report on Maternity, 54,875 women gave birth in New Zealand in 2004. Of these, two-thirds (36,466) gave birth by spontaneous vaginal birth (NZHIS, 2007). Unfortunately only episiotomy rates are identified in this report and therefore it is difficult to ascertain all other degrees of perineal trauma experienced by women in New Zealand. However the Midwifery and Maternity Providers Organisation (MMPO), which is a practice management and quality assurance framework for self-employed midwives, has published two reports on care activities and outcomes for women booked with a self-employed midwife (NZCOM, 2008b, 2009). The two reports titled *Report on MMPO Midwives Care Activities and Outcomes* provide data regarding perineal outcomes of women in New Zealand/Aotearoa following birth (Figure 2.1). The degrees of perineal trauma in the reports are classified into the international classifications: first, second, third and fourth degree tears (NICE, 2007). However, whilst the percentage rates of lacerations/tears are identified, the reports do not clarify whether the perineal tears were sutured or not sutured. Both reports also indicate episiotomy rates for women.

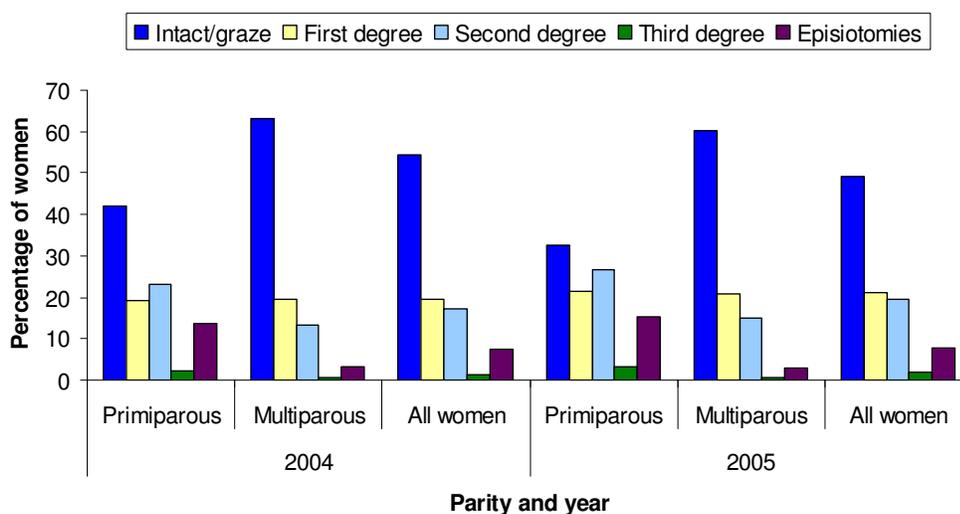


Figure 2.1. Perineal outcomes for women during self-employed midwives' care MMPO 2004 & 2005 (NZCOM, 2008b, 2009)

\* MMPO data: 2004 vaginal births n= 9080 and 2005 vaginal births n =11692

## 2.4 Midwifery technical skills and education

Up until the late eighteenth century midwives had very little formal training in the art and science of childbirth and most skills of midwives were acquired by being passed down from mother to daughter. However midwifery is now based upon an integration of knowledge that is derived from the arts and science and tempered by experience and research (NZCOM, 2008a). Walsh (2007) acknowledges the incredible anatomical and physiology adaptations that occur during childbirth that practitioners need to understand. The structures of the perineal floor alter during birth and midwives require a sound understanding of the structures involved during the process of childbirth (Kettle, 2006a).

Midwifery practice in New Zealand regarding perineal care has followed a similar pathway to the United Kingdom. Ironically in 1967 midwives practising in the United Kingdom were permitted to perform episiotomies but not allowed to suture the trauma caused by the surgical incision (Kettle, 2006b). It was not until 1983 that perineal repair was included in the midwifery curriculum in the UK with New Zealand following a similar pathway (personal communication with Sally Pairman, 2009).

Decision points to assist midwives identify times when there ought to be an assessment during pregnancy and childbirth are described in the Midwives' Handbook for Practice (NZCOM, 2008a). The fifth decision point in labour refers to the midwife's role in critical assessment of perineal trauma after birth as an essential part of assessing the physical wellbeing of the woman (NZCOM, 2008a). The midwives Scope of Practice (MCNZ, 2005b) states that:

*The midwife works in partnership with women, on her own professional responsibility, to give women the necessary support, care and advice during pregnancy, labour and the postpartum period up to six weeks, to facilitate births and to provide care for the newborn.*(MCNZ, 2005b)

Within this Scope of Practice, midwives in New Zealand undertake perineal assessment following birth and repair if required, of a first or second degree tear or labial lacerations. However if assessment indicated a third or fourth degree perineal tear or complex vaginal laceration it is expected that midwives would refer to an

obstetrician for consultation as specified in the Referral Guidelines (*New Zealand Public Health and Disability Act 2000*).

The links between knowledge and education for midwives on perineal care and improved physical and psychological health outcomes for women have been explored in various studies (Andrews, Thacker, Sultan, & Kettle, 2005; Mutema, 2007; Odibo, 1997). Sultan, Kramm and Hudson (1995) explored trainee doctors' and midwives' knowledge of perineal anatomy and assessed the satisfaction of training in perineal anatomy and repair. Seventy-five midwives were interviewed and only half of these indicated that they considered their training in perineal anatomy, repair and recognition of tears to be of a good standard. The authors stated that although perineal repair is frequently performed by both doctors and midwives, perineal anatomy is poorly understood. Another study conducted by two New Zealand obstetricians explored aspects of perineal repair of episiotomies and concluded that both doctors and midwives required education in assessment of perineal trauma (Robinson & Beattie, 2002). Perineal care is one of the components in the curriculum for undergraduate midwifery students in New Zealand and all students must demonstrate competency in basic midwifery skills of perineal repair.

A national clinical quality improvement initiative in the United Kingdom (Bick et al., 2010) has been proposed. This longitudinal study has been designed to improve the assessment and management of perineal trauma. The main aim of this trial is to evaluate whether enhanced training in perineal assessment and management can reduce immediate and longer-term maternal morbidity relating to the management of perineal trauma. The multi-centred randomised trial will utilise matched pair clusters to explore perineal outcomes for women who will receive midwifery perineal care either from midwives who have or have not undertaken a multi-professional training package which has been designed to enhance the assessment and management of perineal trauma. The study will assess women's experiences of perineal pain, pain on activity, breastfeeding uptake and duration and psychological well-being at 10 days and three months post-birth.

A survey of midwives (n=106) with variable experiences in perineal repair was undertaken in Australia (Dahlen & Homer, 2008). The survey, conducted via convenience sampling, was completed during the midwives' participation in a seminar on perineal care. The survey sought information on a range of views relating

to perineal repair and explored midwives' experiences, confidence and education, attitudes and trends towards perineal repair. An interesting finding of this study was that 73% of participants reported that they were more likely to suture perineal tears than they were five years ago in their practice and the authors suggest that this was due to a greater appreciation of woman centred care. The results of the study highlighted that 52% of the midwives said that they would always repair a second-degree tear whilst 13% reported that they would not repair a second-degree tear 50% or more of the time. However the authors concluded that further research is needed to clarify these findings and determine whether they represent the wider midwifery opinions in Australia.

McCandlish et al., (1998) conducted a large Randomised Controlled Trial (RCT) (n=5471) in the United Kingdom. The study reviewed the effect of different approaches to care of the perineum during the second stage of labour and outcomes for women; either the midwives hands were on the baby's head at birth or their hands were poised and prepared to put light pressure on the baby's head. The findings suggested that more women may experience perineal lacerations than previously believed. The outcomes indicated that high rates of perineal trauma were reported regardless of their randomised group (hands on or hands poised) with 59% of all women in the study sustaining sufficient trauma to warrant suturing.

Perineal outcomes for women in New Zealand have been described in three studies undertaken in New Zealand which have all explored the outcomes for women with midwifery-led care (Anderson, 2006; Guilliland, 1998; Miller, 2008). Guilliland explored outcomes for women cared for by self-employed midwives and found that 11% of women experienced a second-degree tear; 9.2% of women had perineal sutures and 1.8% had no sutures. Perineal outcomes for women were also explored in a study undertaken by Anderson (2006) who described outcomes for women (n=485) who planned a home birth. Findings from this study suggest that women who birthed at home were more likely to have intact perineums following birth compared to those who birthed in hospital.

A more recent study explored women's outcomes of their first birth at either home or hospital and reviewed perineal outcomes for women in more depth (Miller, 2008). Miller, found that there were no differences in perineal outcomes. However, the study revealed some differences as to whether or not the tears were sutured, by the

place of birth. LMC midwives providing care to women in hospital were less likely to leave the tears unsutured. Miller suggests that this may be due to the midwives utilising their medical colleagues for suturing in the hospital whereas in the home environment the midwives themselves performed the suturing.

Currently in New Zealand there is no published data regarding suturing practices amongst midwives employed in hospitals (DHB's). However all midwives in New Zealand are required to undertake a biannual quality assurance process called a Midwifery Standards Review (MSR) (NZCOM, 2007). The MSR has evolved over the past 20 years within New Zealand midwifery and reflects the partnership model of midwifery practice. One of the components of the MSR is that midwives reflect on their practice and are expected to review statistics of their practice. In one data field midwives are asked to report on is perineal lacerations experienced by women in their care and whether tear is sutured or not sutured. This data however is not published and is used by the individual midwife to reflect on her practice.

Cronin and Maude (2009) have suggested that there has been a tradition of suturing second degree tears in New Zealand and have based this comment on data reported in one Annual Clinical Report. However there is no nationally published literature or data to support this position. This highlights the importance of collecting data to inform practice.

Over the last decade midwifery practice has gradually changed regarding perineal repair after normal birth. Kettle (2006b) states that there are increasing numbers of midwives in the United Kingdom who are leaving perineal trauma unsutured without robust evidence to support this practice. However, Walsh (2000) suggests that leaving small second-degree tears unsutured should be an option for women and an approach where all perineal tears are sutured highlights a medically driven model of care rather than a woman focused model.

## **2.5 Women's inclusiveness in the decision-making process**

Women are actively involved in decision-making in their maternity care in New Zealand. The Code of Health and Disability Services Consumers Rights Regulation 1996 (*Health and Disability Commissioner Act 1994*) ensures the right of the consumer to be fully informed (Right 6) and the right to make an informed choice

and to give informed consent (Right 7). This notion is supported in sociological research which refers to the importance of including women in the decision-making process (Salmon, 1999).

VandeVusse (1999) explored decision making through undertaking an analyses of women's birth stories. The women reported that they wanted to be active participants in the decision making, but they rarely expressed the desire to make all the decisions. It has been suggested that whilst women seek professionals for their knowledge and expertise, they also expect the professionals to solicit their own perspectives and knowledge (Guilliland & Pairman, 1995; VandeVusse, 1999).

Clement and Reed (1999) explored the inclusion of women in their decision about whether or not to have sutures and found that 70% of the women felt that they were given a choice. Women were also asked about being influenced by their midwife in making their decision to either have sutures or not to the perineal tear. Most women in the study believed that midwives had a significant influence on their decision, with 26% having a small influence and 6% feeling that the midwife had had no influence at all. The authors suggested that it is important to consider the context in which the views or choices are presented to women. Findings of a study undertaken in the United Kingdom (Spendlove, 2005) found that the views and wishes of the woman were recognised as an important aspect in the decision-making process although the study suggests that midwives may provide information to women in a way that encourages certain management and possibly in relation to the midwives own preferred management of the perineal tear.

Clement and Reed's (1999) study highlighted that the effects of suturing or non-suturing of the perineum for women are not only seen from a physical perspective but also from a psychological and social view point. The woman's own views, experiences and other women's stories of suturing impacted on the woman's beliefs regarding suturing versus non-suturing. The study found that the actual procedure of suturing following childbirth for some women was not perceived as a purely clinical procedure. The results suggest that women may choose the path of non-suturing over suturing due to the anticipated pain during the suturing procedure itself. In this study women used powerful and emotion-laden words, such as endure, awful, barbaric, intrusive and violated, to describe the stitching process. The experiences of the interpersonal relationships during labour and then through the suturing procedure

were explored in a study undertaken by Salmon (1999). Key themes emerged from this study which highlighted that interpersonal relationships during labour and following birth were very important for the woman particularly if suturing of a perineal laceration occurred. This is relevant for midwifery practice as it highlights that women need to be included in the decision-making process of whether or not to have sutures.

Davis (2005) suggests that within the New Zealand partnership model of care decision-making involves negotiation between women and midwives. It is the professional role of midwives to advise and support women in their decisions and this is achieved through sharing and utilizing practice experiences but more importantly by midwives incorporating current evidence to support their practice decisions.

## **2.6 Professional Standards, Guidelines and Hospital Policies**

It has been suggested that practice conventions, policies and guidelines can effect professional socialisation by challenging traditional midwifery practice (Parsons & Griffiths, 2007). Professional standards in New Zealand are set by the professional organisation, the New Zealand College of Midwives (NZCOM) which recognises that midwives are autonomous practitioners regardless of the practice setting and are accountable for their practice (NZCOM, 2008a).

Whilst midwifery guidelines on the topic of perineal care have been developed in countries around the world, there are no clear guidelines as to whether to suture or not to suture perineal tears. A United Kingdom midwifery practice guideline (RCM, 2008) on suturing the perineum explores and describes the evidence to support midwives in practice. This guideline has been developed in an attempt to make a range of research accessible to midwives for underpinning practice. The guideline states that studies on non-suturing of the perineum have conflicting findings in respect of the impact of perineal healing and suggested that further studies are required. The guideline made no further recommendations for midwives to follow. A Scottish midwifery guideline (NHS, 2008) developed with the aim of supporting practice, concludes that the current weight of evidence indicates that second-degree tears should be sutured but also recognises that some studies have brought this

recommendation into question and this should be part of the woman's informed choice.

NZCOM refers to the topic of perineal care in the decision points for midwifery care after birth. However, unlike the Royal College of Midwives (RCM, 2008) the NZCOM has not published national midwifery guidelines or a consensus statement on the topic of perineal care. This may be an area for future consideration as midwives do have a responsibility for guideline development as described in Standard Seven of the Standards of Practice (NZCOM, 2008a). The criteria states:

*Seeks to maintain and improve the policies and quality of service in the organisation or agencies in which she works*  
(NZCOM, 2008a)

The United Kingdom who has also approached perineal care from a multidisciplinary perspective, recommends that women should be advised that in the case of a second-degree trauma, the muscle should be sutured in order to improve healing (NICE, 2007). However the sourced guidelines (NHS, 2008; NICE, 2007; RCM, 2008) have limited evidence to support midwifery practice regarding suturing versus non-suturing. In particular there is little evidence presented to aid midwives decision-making, as the context of the midwifery practice is not explored and the uniqueness of the individual woman is absent.

There are no multidisciplinary practice guidelines specifically designed for use in New Zealand maternity services although the topic of perineal care in general is incorporated in the Scope of Practice for midwives and in the expected competencies for midwives (MCNZ, 2005a). It has been suggested that decision-making can be affected when practice is controlled by the hospital unit's convention instead of a formal guideline or policy (Parsons & Griffiths, 2007). Midwives in one study (Cioffi et al., 2008) made no reference to either guidelines or policies that were present in the birthing units. The authors suggested however that these could influence decision-making and needed further consideration. The degree to which professional guidelines or hospital policies may influence New Zealand midwives in their decision-making to either suture or not to suture is currently unknown.

## **2.7 Perineal assessment following childbirth**

A midwife's normal practice is to visualise and assess the perineal area after birth and in partnership with women explore and discuss all options based on the midwife's findings to enable informed decision-making (NZCOM, 2008a). However the identification of any tears or trauma can be a complex process. It has been suggested that the highly subjective nature of describing second-degree perineal tears means that a method of measuring of the tears is required (Tohill & Metcalfe, 2006). To date there have been various tools that have been explored, developed and trialled, to aid the decision-making process for midwives. However the development of reliable objective assessment tools has been difficult as there are two key components in the assessment process; the woman and the midwife. Each woman will experience different perineal outcomes following childbirth and whilst the midwife assesses each woman as an individual it is assumed that midwives will also consider any available evidence on the topic as well as use their own practice experiences and knowledge whilst also considering women's wishes.

The first tool, which was developed in an attempt to evaluate postpartum healing, was a scale developed by Davidson (1974) who used a paper tape to measure five components of healing; amount of redness, edema (oedema), ecchymosis (bruising), discharge and approximation; REEDA. In 1990, the perineal assessment tool (PAT) was devised to test if the REEDA scale could be used for assessing perineal trauma (Hill, 1990). The PAT tool utilised a categorical scoring system which proved to be too subjective and resulted in low reliability and therefore was not advised for use in clinical practice. Steen and Copper (1997) modified the REEDA scale and designed a series of photographs and a scoring scale with the aim of detecting and monitoring levels of perineal trauma. The concept of photographs was explored further as part of another tool design (Gomme et al., 2001). During the design phase the authors highlighted that photographs do not adequately represent the bleeding or depth of the tear to allow the decision to be made regarding suturing or non-suturing. This study produced a tool by which midwives rated the severity of the perineal tear with a scoring system. During the testing of the scoring system tool (Ullman, Yiannouzis, & Gomme, 2004) the authors identified validity and reliability issues that required further design adaptations and concluded that any tool needs to take the complexity and degree of bleeding into consideration.

The latest tool, the Peri-Rule™ (Tohill & Metcalfe, 2006) designed in the United Kingdom is used to measure perineal tears. The device, which is a soft plastic scaled measuring tool, is used to aid in the classification of a perineal tear, particularly in the identification of a second-degree tear. The measuring device is used against a set of questions guiding the midwife in her assessment and gauges the depth and length of the tear. The tool cannot as yet be used to gauge the measurement of more complex and branched tears (Tohill & Metcalfe, 2006). It is possible as suggested in recent studies (Cioffi et al., 2008; Spendlove, 2005) that the multiple factors influencing midwives in their decisions also need to be taken into account when such tools are being developed. It is unknown if such tools or others are being used by midwives in New Zealand to aid their decision regarding to suture or not to suture.

## **2.8 Exploring the literature: To suture or not to suture?**

Internationally, the answer to the fundamental question of whether or not to suture or not to suture spontaneous perineal tears remains inconclusive. Whilst the research on perineal care continues to increase in the areas of perineal repair, suture techniques and choice of suture material, there remains limited research to support midwives in their decision as to whether or not to suture (Kettle et al., 2007).

The current debate and exploration on the topic of suturing versus non-suturing of perineal tears was initiated through two retrospective studies (Clement & Reed, 1999; Head, 1993). A retrospective pilot study, conducted in the UK (Head, 1993), was the first study to suggest that tears could be left to heal naturally by secondary intention. According to Head, there had been a hospital policy of non-suturing first and second degree tears for 15 years and these tears were left to heal naturally. The study used a questionnaire to ask women to recall their experiences of perineal trauma following birth and compared the effects of the perineal trauma of suturing versus no suturing. Participants were asked to comment on the effects of either experience in relation to pain, healing and infection. Fifty-five multiparous women, who had experienced sutures for at least one birth, were included in the study. The results found that women who did not have sutures were more comfortable. There appeared to be no difference in perineal healing. Limitations of the study included the undefined time period of women between births and completing the questionnaire and that the outcomes did not differentiate between the degrees of perineal tears. Also of note was that Head's normal practice was that of non-suturing. Whilst the

study concluded that the long-term effects of leaving a perineal tear unsutured were not known and more studies were required, it would appear that the publication of this study initiated the debate among midwives surrounding suturing or not suturing spontaneous perineal tears. Anecdotal evidence suggests that it was around this time period that midwives considered their options of non-suturing (Walsh, 2007).

Clement and Reed's (1999) study was not conducted until 6 years later in England. The aim of this retrospective study was to examine and describe the views, experiences and long-term perineal health of a sample of women cared for by a group of midwives. One of the authors was a member of a group of midwives whose usual practice was non-suturing of perineal tears similar to the practices described in the study by Head (1993). The author had observed good healing outcomes in her own practice for women at 28 days postnatally who did not have sutures to perineal tears. Clement and Reed's qualitative study focused on the decision-making process for women and their options of choice about whether or not to have sutures. The study population (n=107) was women who had unsutured perineal tears and who had birthed between six months and seven years previously. The authors devised a questionnaire which incorporated the McGill Pain Inventory (Melzack, 1975) as a gauge for women to score the intensity of their perineal pain following birth. The outcomes highlighted that the majority of women (91%) indicated that they had positive views of non-suturing compared with only two had had negative views and seven having mixed views.

However, there were a number of limitations in the Clement and Reed's (1999) study as the women all received midwifery care from midwives in the same practice. The authors suggested that it was unknown if women may have felt reticent about expressing dissatisfaction about the midwife who cared for them. There was also no control group of women who had had sutures for comparison. The time period may also have had some influence on the results as women may not have clearly recalled their initial experiences of pain and discomfort, as some of women had birthed seven years earlier.

Both studies (Clement & Reed, 1999; Head, 1993) suggested that non-suturing may have positive benefits for women. Clement and Reed (1999) concluded that the findings provided some evidence for the safety and accessibility of leaving some tears unsutured. However, these studies which reviewed healing and pain factors for

women, were conducted by midwives who very rarely sutured second-degree perineal tears as their usual practice and the outcomes could be viewed as having biases towards non-suturing. There was no control group in either study and as numbers of women involved in both studies were small caution needs to be used when midwives apply the findings to the wider birthing population.

Three Randomised Controlled Trials (RCT) have been conducted to date regarding practices of suturing versus non-suturing of perineal tears (Fleming et al., 2003; Langley et al., 2006; Lundquist et al., 2000). The first RCT was conducted in a large university teaching hospital in Stockholm, Sweden (Lundquist et al., 2000). The aim of the study was to determine any differences in the healing process and experience of *minor* perineal lacerations for women when perineal tears were sutured or not sutured. Women were informed of the study in the antenatal period and recruited after birth if they met the criteria: primiparous women, 37-40 weeks gestation, and normal spontaneous births with either a first or second-degree perineal tear. Ten midwives were specially trained to carry out the study. A total of 80 women agreed to participate in the study. They were randomised after the births into either the experimental group ( $n=40$ ) tears left to heal spontaneously or the control group ( $n=40$ ) tears were sutured.

Definitions of the tears were clearly specified as was the repair technique. The inclusion criteria specified that the lacerations were *minor*, although this was not based on recognised international definitions (NICE, 2007). Women who had lacerations of the labia, vagina and perineum that were bleeding were excluded from the study. For women randomised into the control group the suturing technique was carried out according to the hospital's practice at that time. Pain relief techniques for suturing used in this study included Xylocaine spray and pudendal blocks both of which are not common practice in other countries.

Women were followed up by the research midwives at 6, 24, and 48 hours after birth then again at eight weeks and all women were sent a postal questionnaire at six months postpartum. One limitation of the study was that all the midwives collecting the data had performed the suturing and this may have had some effect on the interpretation of their findings and biases of the study. The authors commented that the midwife undertaking the follow-up assessment was not blind to what treatment that the woman had received, as the midwife could easily observe whether suturing

had or had not occurred. This highlights the difficulties of a double-blinded controlled trial in this type of research.

The results however, suggest that suturing may disturb and interfere with initial breastfeeding as 16% of women who had had sutures considered that breastfeeding had been adversely affected compared to none in the non-sutured group ( $p = 0.04$ ). Walsh (2000) supports this notion that non-suturing of perineal tears can have a positive effect on breastfeeding outcomes as women have less painful perineum and therefore are more comfortable postpartum.

At eight weeks the results showed no statistical difference in healing of the labia, vagina or perineum. As with other studies (Clement & Reed, 1999; Head, 1993) this study highlighted that women should be given an opportunity to choose suturing or non-suturing although the authors caution that this choice is limited to the degree of the perineal tear. It was an interesting decision by the researchers to exclude perineal tears that were bleeding, as this clinical finding may have influenced midwives in their decision-making regarding suturing or non-suturing. The authors suggested that the REEDA scale (Steen & Cooper, 1997) which is used to gain a more objective evaluation of the healing be utilised in future studies. It has been suggested that the ten research midwives involved in the Fleming et al., (2003) study were experienced and used the same technique and suturing method and therefore cannot be representative of the wider practice of other midwives and limited the generalisability of the findings.

The aim of a RCT conducted over two hospitals in Scotland (Fleming et al., 2003) was to review the difference between primiparous women who did or did not have sutures to first or second-degree laceration sustained during normal spontaneous birth after 37 weeks gestation. Women were recruited antenatally as the researchers felt it was unethical to recruit after the birth. The recruited study population was 1314 however only 74 women entered the trial and were randomized after birth into the suture ( $n=33$ ) and non-suture group ( $n=41$ ). As with the RCT conducted by Lundquist et al., (2000) there were clear definitions of the suture techniques and material however there was no clear definition on the degree of the perineal tear for midwives to follow. To give the researchers a more robust analysis of their findings tools such as the REEDA scale, visual analogue Scale, the McGill Pain

Questionnaire (Melzack, 1975) and the Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987) were utilised at 1 and 10 days and 6 weeks postpartum.

At six weeks 33 women were followed up in the suture group and 37 women in the non-suture group. The findings showed no significance in the difference regarding perineal pain but suggests similar themes as findings of previous studies (Clement & Reed, 1999; Head, 1993; Lundquist et al., 2000) of a higher breastfeeding rate in the non-sutured group. The only significant difference that the authors noted was that at the six week postnatal check, the wound approximation of the perineal tear using the REEDA scale was lower (better) in the sutured group of women. However, as only two midwives were taught how to use the REEDA scale to gauge the approximation of the tear, this questions the rigor of the research process. The authors acknowledged that they did not use any standard measures of healing and several midwives were involved in assessing of the wounds.

The RCT by Fleming et al., (2003) suggested that there was evidence that the perineum did not heal as well for women in the non-suture group up to six weeks in the postpartum period. The authors recommended that until a long term study is undertaken, perineal tears should be sutured. The authors were anticipating recruiting 340 women. However only 37 women in the non-suturing group were followed up to six weeks postpartum and therefore the findings need to be treated with caution. The researchers suggested that the lower than anticipated number of women involved in the study was due to numerous factors. Many women changed their minds about participating in the study after birth and the authors suggest that midwives may have influenced this decision as they did not support the process of randomisation.

Fleming et al., speculate that midwives wanted to avoid suturing the tear as midwives lacked confidence in undertaking the suturing procedure. However it could be argued that the midwives decision-making was an important aspect of the midwifery care they provided to women. The authors stated that: “There were some midwives who remained hostile to the study saying that they were unable to exercise their clinical judgement” (p. 687). This comment suggests that midwives in the study overrode the research process in favour of their own knowledge and clinical findings as the midwives were reluctant to randomise women into one particular arm of the study.

A more recent RCT was conducted in a maternity unit in South Devon, United Kingdom (Langley et al., 2006). The aims of the study were similar to previous RCT's (Fleming et al., 2003; Lundquist et al., 2000) however the primary outcome was to review the effects of suturing or non-suturing on perineal healing outcomes for women. Women were recruited into the study during the initial antenatal visit. A midwife conducted the study and gave out information to women at antenatal and parent craft classes. The project team designed a proforma to measure the severity of oedema, bruising, healing and infection. Women who had sustained a second degree perineal tear which was not bleeding and had apposed edges were included. No other definitions were noted and the initial suture technique was described as the interrupted technique however the authors note that suturing practices changed during the course of the study.

A study population of 1640 women was recruited in the antenatal period and 200 women entered the study at the time of birth; 100 were randomised into the suture arm and 100 into the non suturing arm. As with the previous study (Fleming et al., 2003) the authors suggested that the recruitment rate was lower than anticipated. Women believed that one of the management regimes was preferable to the other and therefore chose not to be involved in the study as they did not want to be randomized to the treatment option. Women based their decision to be involved in the study on their own experiences or on the advice of relatives or friends. As with the Fleming et al., study, the authors suggest that there was failure to comply with the randomisation schedule as the midwives were not willing to leave more severe tears unsutured. Yet again, this highlights the difficulties of such a study when there are clinical scenarios involved and where health practitioners feel their clinical judgment outweighs the principal of adhering to the study protocol.

Assessment of healing was conducted by the midwife at 5, 10 and 28 days after birth and women were invited to respond to a questionnaire about their own perception of perineal healing, pain control, pelvic floor exercises, problems with urine leakage and resumption of sexual intercourse. Langley et al., (2006) concluded that the benefits or not, of suturing second degree tears were not straightforward. They suggested that the severity of the tear appears to be a function of the midwife's examination rather than a clinical need and therefore the act of suturing imparts an impression of a more severe perineal wound. The findings indicated that healing is faster in the early stages following suturing but not in the longer term. The authors

suggest that initial pain relief is required less in the group of women who had a non-sutured perineal tear. There was no discussion or comparisons as with previous RCT's (Fleming et al., 2003; Lundquist et al., 2000) that breastfeeding rates were affected by either suturing or non-suturing.

The long-term physical and psychological outcomes of non-repair of second-degree tears were the main objectives of a prospective study conducted in the United Kingdom (Metcalf, Bick, Tohill, Williams, & Haldon, 2006). The study was conducted over a 12 month period and included women who had sustained a second-degree tear who had a midwife managing the perineal trauma. Women were recruited into the study in the antenatal period and received written information on the project and again at 24 hours after the birth. Women were sent a validated maternal health questionnaire on four occasions; 10 days, 12 weeks and 12 months postpartum. Questions were related to common postnatal health symptoms and included pain, presence of perineal infection and psychological postnatal wellbeing. The authors utilised a measuring tool, the Peri-Rule™, to measure the degree of severity of the perineal tears at birth (Metcalf et al., 2002).

The results showed that a third of women with second-degree tears were unsutured. The authors (Metcalf et al., 2006) suggested that midwives decided not to suture smaller tears however did not appear to consider the depth of the tear in their decision. One key finding that the authors noted was that there appeared to be higher levels of morbidity than expected for women, regardless of being in either group; suture or non-sutured. The authors suggested that before further studies comparing suturing and non-suturing are conducted there is a need for training in perineal care. This statement is based on the speculation that the midwives in the study lacked confidence to assess and manage the perineal trauma. The authors concluded that there is still not enough evidence to change from suturing to non-suturing of second-degree tears and that until evidence from high-quality RCTs are available, all second-degree tears should continued to be sutured.

The benefits of not suturing spontaneous second-degree perineal lacerations was explored in a prospective cohort study undertaken in New Mexico (Leeman, Rogers, Greulich, & Albers, 2007). This study compared the postpartum pelvic floor function of women with sutured second-degree perineal lacerations, unsutured second-degree perineal lacerations and intact perineums. The study which was conducted between

March 2002 and December 2006, excluded women who experienced an episiotomy or an operative vaginal birth. The study comprised of 17% of women who had experienced a second-degree tear, of whom 55% had sutures and 45% who had no sutures to the perineal laceration. Women who had an intact perineum were used as a comparison group.

Women in each of the three category groups in the study by Leeman et al., (2007) were followed up at either six weeks or three months postpartum. At discharge from the birthing hospital, women with an intact perineum required less pain relief and had lower pain scores than those who had experienced a second-degree laceration. Women in the sutured group were more likely to use pain relief than women with unsutured or an intact perineum at the time of discharge however pain scores were no different between sutured and unsutured women at the time of discharge or at the three month follow-up postpartum. There were no differences in pelvic floor muscle strength between the sutured and unsutured groups and subjective approximation of the perineal wounds undertaken by the midwife at six weeks was similar between both groups. Women with a second-degree laceration experienced a weaker pelvic floor function compared with women with an intact perineum however there were no differences in pelvic floor strength between women with a sutured or non-sutured second-degree laceration.

The authors (Leeman et al., 2007) concluded that the study found no benefit to the suturing of second-degree lacerations on the postpartum pelvic floor function in the short term and suggested that suturing should be deferred because of the increased postpartum pain of a sutured laceration. This study supports the notion that unsutured second-degree lacerations do not affect the postpartum function of the pelvic floor however as with previous studies discussed (Fleming et al., 2003; Langley et al., 2006; Lundquist et al., 2000) long-term outcomes still need to be considered before midwives are able to confidently utilise this evidence into their practice.

Whilst there is some evidence that non-suturing supports improved breastfeeding outcomes, the results of the studies discussed so far in this chapter, have highlighted that there is inconclusive evidence to support or refute suturing versus non-suturing of spontaneous perineal tears as the long-term effects for women are still unclear. There is a suggestion that midwives' confidence in identification and repair of the tear may affect the choice of non-suturing a perineal tear over suturing (Dahlen &

Homer, 2008; Fleming et al., 2003). However there have been limited studies regarding these factors that may influence midwives in their decision-making as to suture or not to suture spontaneous tears.

## **2.9 Decision-making: Suturing versus non-suturing of perineal tears**

Research focusing specifically on midwifery decision-making to suture or not to suture perineal tears is limited. Decision-making is a fundamental and integral part of professional practice; decisions that are made determine the actions and practice of the midwife and the quality of midwifery care. Tupara (2008) suggests that midwives in New Zealand have an ethical and legal obligation to inform women of their choices and that they are also in a position to influence the decisions that women make. Clinical decision making is a multi-dimensional activity which is influenced by several aspects; clinical expertise, research evidence, individual and women's preference. There have been two studies which have addressed aspects of decision-making and factors that may influence these decisions regarding management of perineal trauma (Cioffi et al., 2008; Spendlove, 2005).

In 2005, a qualitative study using grounded theory was conducted in the United Kingdom (Spendlove, 2005). The aim of the study was to gain an understanding of the processes by which midwives made professional decisions regarding management of perineal trauma. Seven midwives, all with different degrees of experience, confidence and knowledge were interviewed. Two of the participants held no practical skills on perineal repair; three had limited skills and did not feel competent to undertake perineal repair and two who undertook perineal repair on a regular basis felt competent with this skill. The study explored the reasoning and evidence which midwives call upon to make decisions of either suturing or non-suturing of perineal tears.

The research focused on factors that underpinned midwives final decision-making and identified two stages in the decision-making process. Spendlove named these stages as the '*assessing phase*' and '*contemplating phase*' and suggested that individual knowledge by the midwife influenced their decision-making in these phases. The author hypothesises that midwives utilise their knowledge of the clinical scenario during the *assessing* phase along with their professional judgement in the *contemplating* phase, which is much more complex in nature. The results of the study

showed that midwives were influenced by their own knowledge base, experience and confidence relating to perineal care and repair. One key finding was that midwives indicated the importance of the clinical assessment process and the identification of the genital tract trauma. The researcher concluded that midwives decisions are complex and are influenced by multiple factors which challenge midwives to reflect upon their knowledge base and how they make decisions.

A more recent study conducted in Australia (Cioffi et al., 2008) explored cues, related factors, underlying knowledge and experience that aided midwives in their decision to suture after childbirth. This descriptive study used in-depth interviews of 19 midwives all of whom had worked continuously for the past five years or more in a birthing unit. The midwives were directly involved in the clinical decision-making process, either with regard to making referrals or they carried out the perineal repair themselves. This study has provided further evidence of the strong influence of clinical characteristics on the midwives' decision and supports Spendlove's (2005) findings. However, whilst the importance of clinical characteristics have been discussed in previous studies (Fleming et al., 2003; Langley et al., 2006; Lundquist et al., 2000; Metcalfe et al., 2006), the study by Cioffi et al., also demonstrated that there are other factors that are equally influential.

The main finding of the study was that midwives did use cues in their decision to suture or not suture perineal tears (Cioffi et al., 2008). Two key clinical cues were highlighted: bleeding and the degree/type of perineal trauma. However, as with Spendlove's (2005) study knowledge, experience and the midwife-women relationship were also key findings that influenced the midwives decision. A similar notion was considered during a focus group discussion undertaken during the development of an assessment tool (Gomme et al., 2001). The focus group midwives discussed factors such as women's wishes, legal aspects and general health before deciding whether to suture or not to suture. The midwives in the focus group also highlighted that the influence of the degree of tear and the influences of such factors as bleeding or complexity of the perineal tear were key influences in their decision-making. Cioffi et al., (2008) concluded that midwives may benefit from the development of a cue and related factors inventory to help with their clinical decision-making regarding to suture or not to suture.

Although both study populations (Cioffi et al., 2008; Spendlove, 2005) were small and were designed to collect in depth information rather than be generalisable they have nevertheless contributed important evidence to the global discussion on suturing versus non-suturing of perineal tears. Their findings indicate that the process of decision-making for midwives is complex. The results have shown that knowledge and an understanding of the anatomical structures of the perineal body were influential for the midwives in the studies. Midwives also utilised cognitive processes gained from their own experiences, cues and knowledge to aid their decision-making as to suture or not to suture perineal trauma. The context of practice of the midwives in these studies (Cioffi et al., 2008; Spendlove, 2005) are unique for the United Kingdom and Australia and it is not known if similar findings would occur in the New Zealand context of practice. The aim of this current study is to investigate influences on midwives in the New Zealand context with regards to decision-making around perineal care.

## **2.10 Summary**

The aim of this study is to contribute to the growing body of midwifery knowledge on perineal care and gain an understanding of factors that influence midwives in New Zealand in their decision to suture or not-suture spontaneous perineal tears. Whilst the body of evidence relating to the topic of general perineal care continues to grow, the evidence to support midwives in their decision of suturing or non-suturing of perineal tears still remains inconclusive.

This chapter has explored the context of New Zealand practice, current literature and views relating to this topic. It has highlighted the dearth of literature from the New Zealand context of practice and the increasing amount of research and practice guidelines from the United Kingdom. The literature explored has confirmed the importance of the clinical assessment process in decision-making but has demonstrated that influences of everyday practice have not been taken into account. Similarly, the decisions and inclusiveness of women are invisible in some studies. Whilst recent researchers (Cioffi et al., 2008; Spendlove, 2005) have explored factors that may influence the decision-making for midwives of suturing or non-suturing of perineal tears it is unknown if similar or other factors may influence New Zealand midwives in this decision.

The following chapter will discuss the methodological framework, ethical implications and methods used to undertake this study.

## **Chapter Three: Methodology**

### **3.0 Introduction**

This chapter presents the rationale for choosing the methodological framework underpinning this research. It describes the ethical implications, data collection process and methods of data analysis utilised in this study.

This study was undertaken using a quantitative inquiry of non-experimental design which utilised a survey approach to gather the data. Quantitative research is a logical, stepwise process and it focuses on providing statistical measures of the topic being studied (Davidson & Tolich, 2003). The aim of the research was to describe the degree of influence of specific factors that may influence midwives in their decision-making to suture or not suture spontaneous perineal tears following normal birth. The choice of quantitative research was the most appropriate option to enable data collection from a large sample leading to descriptive analysis of the research questions being asked.

### **3.1 Survey approach**

The rationale for choosing a survey approach for this study was that it provided a systematic method for gathering information from a well-defined population, with the aim of producing accurate quantitative descriptors. Surveys are one of the most commonly used methods in the social sciences to help provide an understanding of the way societies work and can test theories of behaviour (Davidson & Tolich, 2003; Groves et al., 2004). Surveys can also test and attempt to either measure everyone in a population or a sample of that population and they can be used for almost any population. The main advantage of utilising the survey technique for this study was that it would enable collection of data from a large sample and thus the results could then be generalised. Another important aspect for consideration in this study, was that through the use of a survey, standardisation would be achieved by asking the same set of questions, in the same way every time (Davidson & Tolich, 2003).

Whilst surveys collect data from a targeted group of people about their opinions, behavior or knowledge and provide self-reported data from the participants, they do not indicate causality. This is what distinguishes surveys from the experimental approach (Groves et al., 2004).

A principle assumption is that a survey approach should only be used when several simple but essential conditions are met. These have been described by Wagstaff (2006) who suggests that:

*“...the target population is clearly defined; the target population is easily identified; and that it is anticipated that the majority of respondents would be able to answer the questions asked.” (p94)*

The target population for this study fulfilled these criteria. The participants were registered midwives practicing in New Zealand.

### **3.2 Ethical Considerations**

This section describes how processes related to informed consent, anonymity of the participants and cultural considerations were achieved in this study. The initial research proposal was approved by the Otago Polytechnic School of Midwifery Postgraduate Committee (Appendix A). An application was then submitted to the Otago Polytechnic Ethics Committee and after minor amendments were completed ethics approval was granted by the Ethics Committee (Appendices B & C).

#### **3.2.1 Informed Consent**

Two components of gaining informed consent from the participants were undertaken. Participants were invited to participate without coercion and were fully informed about the project. Informed consent was therefore obtained by ensuring that the information sheet (Appendix D) described the research project and explained that return of the questionnaire implied informed consent to participate in the research project. Tolich (2001) discusses the importance of ensuring that participants can withdraw from research at any time up until the data is analysed. This was made explicit to the participants in the information sheet and both the researcher and supervisor contact details were made available to participants. No midwives requested that their information be withdrawn.

#### **3.2.2 Anonymity of the participants**

The population of New Zealand midwives is relatively small and therefore the aspect of anonymity was a crucial aspect in the design of the research project. Tolich (2001) discusses this aspect in reference to New Zealand and suggests that New Zealand's smallness may make it relatively easy to identify participants in research projects. As

I was accessing the NZCOM membership database, it was imperative that strategies were in place to ensure anonymity of the participants. It was for this reason that a research assistant was contracted and she was the only person who had access to the participants' identities. The research assistant signed a confidentiality agreement (Appendix E) before being granted access to the names and addresses of the NZCOM database members.

### **3.2.3 Participant - Researcher Relationship**

As I am employed as a Midwifery Advisor by NZCOM there was potential ethical dilemma inherent in my surveying NZCOM members for whom I work. I was conscious that my advisory role at the NZCOM could be problematic causing some of the participants to feel uncomfortable about completing the questionnaire. It was important that the participants felt assured that the research was part of my own professional and personal goals. This was explained in the information letter (Appendix D) sent to all participants which also explained that I had a supervisor to ensure that I keep congruent with my aims and methodology. At no point during or after the research process have I had access to surveys with names attached. Only the research assistant had access to this information and thus ensured that anonymity of the participants has been maintained. The information letter also informed participants that once the research was completed my aim was to publish in the NZCOM journal and present the research at midwifery conferences.

### **3.2.4 Cultural considerations for research conducted in New Zealand**

It was not until 1988 that The Royal Commission on Social Policy identified three fundamental principles of the Treaty: partnership, participation and protection which apply to aspects of health and social policy (Durie, 2001). The Three Articles of the Treaty are core concepts that underpin the Treaty: Article 2 guarantees Māori hapū the control and enjoyment of those resources and taonga that it is their wish to retain and Article 3 constitutes a guarantee of legal equality between Māori and other citizens of New Zealand. This means that all New Zealand citizens are equal before the law (*The Treaty of Waitangi* 1840). My understanding is that this has an important social significance in the implicit assurance that social rights should be enjoyed equally by Māori and all New Zealand citizens of whatever origin. I have endeavoured to incorporate these principles into this research. Throughout the research process I endeavoured to embrace and respect Te Tiriti O Waitangi

principles of partnership, protection and participation, both in the initial proposal and design of this research and in this report of the findings.

As this research was undertaken in Aotearoa New Zealand, Te Tiriti O Waitangi affirms that tools used for research need to be valid for Māori (Cram, 2001). As non-Māori I wish to acknowledge that I have not attempted or intended to interpret or represent my findings on behalf of Māori and have undertaken consultation as required. As a student of Otago Polytechnic, an important aspect of the research design was that the research needed to be in accordance with the Memorandum of Understanding (MOU) with Ara-i-Te-uru Papatipu Runaka and Otago Polytechnic. I anticipated that Māori midwives would be participating in the study and wanted to make the research welcoming for Māori midwives to participate. As this research project was likely to have benefits for Māori birthing women and Māori health I sought advice from Dr Russell, Kaitohutohu of Otago Polytechnic (Appendix F). This was part of the ethics application process.

### **3.3 Method**

This section describes the implementation of important aspects of survey methodology that were considered in this study: question design, identification and recruitment of the sample population, data collection and the analysis process (Groves et al., 2004).

#### **3.3.1 Consideration of a data collection tool within a survey approach**

Various tools and methods used within a survey approach were explored and initially considered for use in this study. Firstly the option of using a Web-based data collection tool was explored. Whilst Web-based surveys have the potential to be sophisticated and dynamic there can be greater risk for errors (Wagstaff, 2006). Tolich (2001) suggests that by using a Web-based survey it can provide a solution to the ethical principles of anonymity and informed consent however my own experience and knowledge in both development and maintenance of a website was limited and I believed this to be a risk to the research process. Accessibility to the Internet for participants was also another consideration particularly for rural participants. According to a submission relating to issues of accessibility of broadband in rural communities, it was suggested that dialup options were limited in rural households in New Zealand (RWNZ, 2009). It was therefore unknown if

participants would be able to access and respond to the survey via the internet. Therefore due to the risks associated with using a Web-based option this tool was rejected.

My second option was to consider using face to face interviews to collect the information. Although this is a popular tool it has been suggested that having an interviewer present increases the risk of interview bias (Wagstaff, 2006). It was important for me to remain removed from the process to ensure anonymity of the participants and for midwives to answer the questions without any coercion. The same ethical principles applied to the option of telephone interviews and therefore both options were rejected.

The final tool for consideration was a postal questionnaire. I decided to utilise this option as it was the most effective method of data collection and permitted easy access to the participants, maintained ethical principles and ensured that participants remained anonymous.

### **3.3.2 Questionnaire Design**

A questionnaire has been described as a set of standard questions that respondents answer unaided (Wagstaff, 2006) and includes questions that are typically administered in a fixed order and often with fixed answer options (Groves et al., 2004). There was limited quantitative research on my planned research topic that had been conducted utilising the survey approach. However the extensive literature review of both qualitative and quantitative research published on the topic of perineal care influenced the content of the questionnaire used in this study (Cioffi et al., 2008; Fleming et al., 2003; Langley et al., 2006; Lundquist et al., 2000; Metcalfe et al., 2006; Spendlove, 2005). With the aim of increasing content validity during the development stages I sought advice from Professor Peter Herbison, statistician at Otago University. Feedback on the draft design was positive however following his recommendation to encourage a better response rate I moved the demographics section to the end of the questionnaire with the aim of starting the questionnaire with an interesting section.

The four page questionnaire was divided into five main sections with the aim of guiding the participant through a set of questions on the topic (Appendix G). Demographics were collected in the final section; questions six to twelve. The

questionnaire included open and closed questions with various scales to aid data analysis.

Questions one and two were split into two sections. Part a focused on 15 general factors and part b focused on six clinical characteristics relating to perineal care after birth. The factors identified were based upon questions already raised through other research projects and published literature (Cioffi et al., 2008; Fleming et al., 2003; Langley et al., 2006; Lundquist et al., 2000; Metcalfe et al., 2006; Spendlove, 2005). To aid the midwives recall the perineal assessments undertaken I decided to utilise a concept described as “encoding” into the design. This is a process of forming memories from experiences and aids with the process of interpreting the navigational cues required to complete questionnaires (Groves et al., 2004). To enable the midwives to respond to the first two questions they were invited to think about two separate perineal assessments that they had undertaken on two different women where they identified a perineal tear/trauma; one of which they decided to suture and one that they decided not to suture. It was hoped that this would help the midwives recall factors that may have influenced their decision to suture or not to suture the identified perineal tear.

Question three related to the participants own knowledge on four topics of perineal care; anatomy, physiology, postnatal perineal care and research on perineal repair. These questions lead the participant into question four which focused on confidence in undertaking perineal repair on four different perineal tears; first and second degree, branching/complex and labial tears (NICE, 2007). The final question related to three tools that have been identified in international literature (Gomme et al., 2001; Steen & Cooper, 1997; Tohill & Metcalfe, 2006) as aiding decision-making to either suture or not to suture perineal tears. It was hoped that the information gathered from the five questions would give insight into the degree of influence that each factor had on the participant’s decision and the reported levels of knowledge and confidence of the midwives in the study. There were free text options for all five questions.

Participants were asked to indicate the degree of influence that each factor may have had on their decision to suture or not to suture on a five-point scale. The Likert scale was chosen as it is commonly utilised to measure attitudes or opinions by asking the respondents to select from a small number of ordered alternatives (Roberts, 2002b;

Wagstaff, 2006). It also permits numerical calculation for the purposes of descriptive and inferential statistics (Roberts, 2002a).

### **3.3.3 Pilot of the questionnaire**

In the design of the questionnaire it was important that processes were in place to ensure reliability and validity. The criterion-related validity is about how the survey performs in relation to other already validated measures in the same area. As this was not a replicated study it would not be known if the validity of the questionnaire was reached until the questionnaire had been completed by the participants. Therefore the validity of this new questionnaire will only be achieved once it has been compared with data collected by other measures (Cluett, 2006b).

A pilot of the questionnaire was conducted over a two week period in April 2009. The recruitment of the participants for the pilot study was via convenience sampling. Ten midwives volunteered and enabled testing of the questionnaire on a small scale. All pilot questionnaires were returned to me for analysis. The responses to the pilot enabled fine adjustments to be made to the final study questionnaire (Cluett, 2006b). In the pilot questionnaire there were ten choices on the Likert scale but after piloting the midwives suggested that they would have preferred fewer options. It has been suggested that to avoid introducing bias there should be an equal number of positive and negative responses with a range of five to seven alternatives (Wagstaff, 2006). This allows for respondents who do not have a strong view or who have not made up their mind on the subject to still be able to answer the question (Polit & Beck, 2006). The scale was changed from a ten-point Likert to a five-point Likert scale.

Participants in the pilot process were invited to complete the questionnaire (Appendix H) and to provide feedback about this process in a further written questionnaire (Appendix I). One suggested addition to the piloted questionnaire was to include the “*woman’s general health and wellbeing*” in the list of factors for questions one and two. This suggestion was incorporated into the final questionnaire. Other than asking for more room to write comments the midwives involved in the pilot found the questionnaire easy to use and stated it was completed in approximately ten to fifteen minutes, depending on whether or not comments were made.

All ten midwives who participated in the pilot were excluded from the final study by ensuring that their names were removed from the NZCOM membership data-base prior to the randomisation process by the research assistant.

### **3.3.4 Access to participants**

Each year there are approximately 2500 midwives who renew their practicing certificates with the Midwifery Council of New Zealand (MCNZ, 2009a). Most midwives in New Zealand, although not all, are members of the NZCOM, the professional body representing midwifery nationally. To enable a random sample of NZCOM members I required access to the NZCOM membership database. A letter of request highlighting the purpose of the study and my intentions was sent to the NZCOM Governing Board who requested that a formal presentation be conducted at one of the Governing Board Meetings (Appendix J). Following this presentation I was granted permission to utilise the membership database along with another postgraduate colleague who also wanted to survey NZCOM members (Appendix K). A specific condition requested by the NZCOM Governing Board was that randomisation should occur in such a way that midwife members of the NZCOM only received one questionnaire to complete from either of the two research projects.

### **3.3.5 Obtaining the study population**

Registered midwives were defined as the study population as they all required standardised qualifications and registration in order to practice (MCNZ, 2005a). The criteria for the registered midwives to be included in the study population were: a NZCOM member and living in New Zealand.

Overseas members, student midwives and consumer members were removed from the NZCOM membership list by the NZCOM membership clerk, leaving 1861 midwife members as the target population. The actual size of the sampling frame for the study was unknown and required clarity and once again I sought advice from Professor Peter Herbison, statistician at Otago University who recommended a sample size of 400.

A simple random sampling process was decided upon. This was undertaken by the research assistant using the randomisation equation of the Microsoft® Office Excel programme (Microsoft ® Office Corporation, 2007). The first 400 randomly selected names were allocated to one researcher and the second 400 randomly selected names

to the other. The names and address were only known to the research assistant. This process ensured that the NZCOM Governing Board request was achieved and midwife members only received one questionnaire.

### **3.3.6 Recruitment and collecting the data**

Survey packs were posted to the 400 randomised midwives allocated to the study by the research assistant. The survey pack included:

- An information sheet which invited midwives to participate in the research study (Appendix D)
- A four page questionnaire (Appendix G),
- A return stamped address envelope to the administrator, School of Midwifery, Otago Polytechnic

The questionnaire was pre-coded and was only identifiable to the research assistant. Only the research assistant had access to both the codes and the participants contact details from the NZCOM database. The letter of introduction and information sheet regarding the study enabled participants to make an informed choice regarding their participation in the study.

Participants were asked to return the completed questionnaire in the pre-paid return-addressed envelope to the, administrator, School of Midwifery, Otago Polytechnic, which ensured further anonymity for the participants. The administrator forwarded the unopened returned questionnaires at weekly intervals to the research assistant. The research assistant marked off the returned pre-coded questionnaires against the randomised sample list on her data-base. Then the returned anonymous questionnaires were forwarded to me as the researcher.

The response rate for the postal questionnaire relied on two components; the accuracy of the NZCOM membership database and midwives returning the questionnaire. It has been suggested that the largest proportions of returns are likely to occur within the first few days with fewer responses as time passes (Miller, 2001; Wagstaff, 2006). A follow-up of non-return participants has shown to increase the response rate by 20% with a second and third follow-up mailing process adding an additional 12% and 10% response rate respectively (Miller, 2001). With this in mind I decided that to increase the response rate in this study I would include two follow up mail-outs to non-respondents. This decision was also supported by Professor

Peter Herbison, statistician at Otago University. This process was conducted by the research assistant at two weeks and four weeks after the first mail out, to those participants who had as yet not returned the questionnaire. The decision to send out all the information again including another questionnaire was made to improve the response rate. The follow-up survey packs included:

- A follow up reminder letter (Appendix L)
- A further questionnaire with the original pre-code set by the research assistant (Appendix G)
- The original information sheet (Appendix D)
- A further return stamped address envelope to the administrator, School of Midwifery, Otago Polytechnic

The period of data collection occurred over a seven week period commencing May 11<sup>th</sup> 2009.

### **3.3.7 Data Entry**

All returned questionnaires were forwarded to me by the research assistant for data entry and analysis. On receiving the anonymous questionnaires from the research assistant I re-coded each questionnaire before I entered the data into the Statistical Package for the Social Sciences (SPSS, version 17, Chicago). An important aspect of quantitative research suggested by Cluett (2006) is that the accuracy of the data entry is maintained. Therefore I rechecked my data entry into SPSS one week after the initial entry which permitted me to manage any discrepancies in the data.

### **3.3.8 Data Storage**

During the research project all hard copies of raw data and the returned questionnaires, were kept in my own home, stored in a locked cabinet and computer analysis was protected by a password known only to me. No data was entered or stored at my place of employment. Following completion of the research project all raw data and computer files will be forwarded to the School of Midwifery, Otago Polytechnic to be stored then destroyed after five years. This includes the randomisation list which will be sent separately by the research assistant.

### **3.3.9 Data Analysis**

Early in the data entry process I was aware of areas in the demographic fields where the analysis could possibly lead to reduced anonymity of participants. The

questionnaire invited participants to indicate their main work type and two midwives indicated that their main work type was both as a self-employed and as an employed core midwife. To avoid these midwives being identified the decision was made to include these two midwives into the self-employed category. Participants in leadership, advisory and education roles also represented a small percentage of overall participants. To ensure anonymity of participant's data these groups were collated together and re-titled as *Leadership Roles*.

SPSS was used to interpret the data. Any incomplete data was identified and accounted for in the results (Cluett, 2006b). Statistical support was obtained from the staff at Otago Polytechnic to ensure appropriate techniques and interpretations were applied to the data analysis. All information regarding participants' identification remained anonymous to both me and the statistician.

As this was a descriptive study, the frequency distributions of the variables were analysed first. Then group comparisons were conducted using cross-tabulation. Both analyses used SPSS (version 17, Chicago). The cross-tabulations of the group comparisons utilised the variables collected through the demographic data and included main work types, years in practice and practice setting which were cross-tabulated with factors asked in the questionnaire.

As nominal and ordinal data was used inferential statistics were represented using non-parametric tests. Using SPSS, the Pearson chi-squared test ( $\chi^2$ ) was used to demonstrate distribution for multinomial data between two groups or sets of data at nominal level. The impact of the participants' main work types, years in practice and practice settings on the factor in question were determined by using Pearson chi-squared tests. A p-value <0.05 was considered to be significant.

For the purpose of data analysis and reporting I decided that a combination of the Likert scale options would be appropriate as this would provide clarity of the presentation of the results. Therefore the sum of categories 1 and 2 of the Likert scale were re-defined as having *little influence* and the sum of categories 4 and 5 on the Likert scale were re-defined as having a *considerable influence*.

### **3.4 Summary**

This chapter has outlined the methodology used to guide this study and has explored the ethical considerations. I have explained my rationale for choosing a postal questionnaire as a survey tool for data collection and have described the outcomes of the pilot questionnaire, the methods used to access participants, collection and entry of data and the data analysis process.

The following chapter provides the results of the analysis of the questionnaire which explores factors that may influence midwives in their decision-making as to suture or not to suture spontaneous perineal tears following spontaneous birth.

## Chapter Four: Results

### 4.0 Introduction

This chapter presents the descriptive analysis of the data. The first section describes the response rates and demographic data. The next section presents results for each of the questions asked in the survey, firstly questions relating to factors that influenced midwives in their decision to suture, secondly questions relating to midwives decision not to suture and thirdly the clinical characteristics of the tear that influenced the midwives in their decision to either suture or not to suture. The final section of this chapter reports on the midwives' views of their knowledge and confidence. Any cross tabulations conducted between years in practice, practice settings and main work type are reported in each of the relevant sections. Non-parametric tests, Pearson chi-squared test, were tested on all groups however only significant findings are represented in table format.

### 4.1 Response rates

The postal survey was undertaken over a seven week period commencing in May 2009. Initially 400 surveys were posted out with two subsequent mail outs at two weekly intervals. Twelve questionnaires were returned unopened to the research assistant due to incorrect contact details. A total of n=216 (54%) questionnaires were returned during the period of the survey process (Table 4.1).

Table 4.1

*Response rate for postal questionnaire*

	Numbers	% Response Rate
Postal follow-up	Returned	n=400
Initial mail out	40	10%
First follow-up	108	27%
Second follow-up	68	17%
Total	216	54%

### 4.2 Demographics

According to the Ministry of Health (MOH) workforce data there were 2547 practising midwives in New Zealand in 2009 (MOH, 2009). The cohort used in this study (n=400) represented 15.7% of New Zealand midwives. The response rate of 216/400 represented 8.4% of New Zealand practising midwives.

### 4.2.1 Ethnicity

The majority of midwives (66%) identified themselves as New Zealand European (Table 4.2). This is consistent with the MOH Midwifery Workforce data report (MOH, 2009).

Table 4.2

*Ethnicity of participants compared to MOH Midwifery workforce 2009 data*

Ethnicity	Participants	Participants	2009 MOH Data
	n	%	%
NZ Maori	9	4.2	7.1
NZ Maori & NZ European	7	3.2	Not reported
NZ European	143	66.2	56.7
European	31	14.4	19.4
Pacific peoples	4	1.9	1.6
Chinese & South East Asian	4	1.9	2.2
Other	17	7.9	Not reported
Not reported	1	.5	
Total	<b>216</b>	<b>100.0</b>	

*Note.* Ethnicity groups in MOH Midwifery Workforce 2009 data was collected via different ethnicity grouping and therefore only compared group's represented. The MOH only uses one category for New Zealand Maori. The percentages are from 2547 practising midwives.

### 4.2.2 Country of Pre-registration

The majority of midwives (67%) identified that they had completed their midwifery pre-registration midwifery education in New Zealand and a quarter indicated that they had completed their pre-registration education in the United Kingdom.

### 4.2.3 Geographic location of practice

Location of practice was based on regions identified by NZCOM. The distribution of midwives in various geographic locations was similar to that identified by the MOH Midwifery Workforce report (MOH, 2009) with the four largest areas being Auckland, Canterbury, Wellington and Waikato (Table 4.3).

Table 4.3  
*Geographic location of participants practice compared to MOH Midwifery workforce 2009 data*

Geographic Location	Participants		2009 MOH Data	
	n	(%)	n	(%)
Northland	15	(6.9)	86	(3.3)
Auckland*	53	(24.5)	762	(29.9)
Waikato	25	(11.6)	224	(8.7)
Bay of Plenty*	16	(7.4)	177	(6.9)
Tairāwhiti	3	(1.4)	30	(1.7)
Hawkes Bay	9	(4.2)	82	(3.2)
Taranaki	4	(1.9)	53	(2.0)
Manawatu-Wanganui*	12	(5.6)	127	(4.9)
Wellington*	23	(10.6)	290	(11.3)
Nelson-Marlborough	7	(3.2)	91	(3.5)
West Coast	2	(0.9)	17	(0.6)
Canterbury*	28	(13.0)	318	(12.4)
Otago	10	(4.6)	110	(4.3)
Southland	8	(3.7)	45	(1.7)
Not reported	1	(0.5)	135	(5.3)
Total	216	(100.0)	2547	(100.0)

\* For analysis purposes District Health Board's grouped together from 2009 MOH report.

#### 4.2.4 Practice of participants

The majority of midwives (78%) described their practice setting as urban, with 19% reporting rural and 3% remote rural. For the purpose of data analysis rural and remote rural midwives have been combined. Nearly all of the midwives (96%) identified that they were currently practising, with only 4% not currently practising. Reasons reported for non-practice included; maternity leave or recently retired.

#### 4.2.5 Main work type

Almost half of the midwives (46%) indicated that they worked as a self-employed case load midwife or LMC and a similar number (45%) indicated that they were employed by a DHB either as core or caseload midwives. The remainder were employed in leadership roles (Table 4.4). These demographics of the main work types of practising midwives are similar to the MOH report (MOH, 2009) with a relatively similar split between employment within the DHB and self-employed practice.

Table 4.4

*Main work type of participants*

<b>Main work type</b>	<b>Participants</b>	<b>Participants</b>
	<b>n</b>	<b>%</b>
Self-employed case load	99	45.8
Employed DHB core	78	36.1
Employed DHB case load	19	8.8
Leadership roles*	17	7.9
Not reported	3	1.4
Total	216	100.0

\* Work type grouped to ensure anonymity of participants due to smaller numbers: represents midwifery leader/advisor/educator/lecturer

**4.2.6 Length of years in practice**

Almost half of the participants identified that they had been practising for 15 years or more whilst the other 55% were spread over the remaining categories : >5, 6-10, 11-15 years of practice (Table 4.5).

Table 4.5

*Years in practice of participants*

<b>Years in practice</b>	<b>Participants</b>	<b>Participants</b>
	<b>n</b>	<b>%</b>
< 5 years	35	16.2
6-10 years	41	19.0
11-15 years	40	18.5
> 15 years	98	45.4
Not reported	2	0.9
Total	216	100.0

### 4.3 Factors that influenced midwives decision to suture

This section presents the results related to the degree of influence for 15 factors on the participant's decision to suture the identified perineal tear. The denominator varies throughout the presentation of the results as not all midwives answered all of the questions. Throughout the presentation of the results the sum of categories 1 and 2 of the Likert scale represent *little influence* and the sum of categories 4 and 5 on the Likert represent a *considerable influence*. These categories were added together to simplify representation of the results.

#### 4.3.1 Confidence in identification, confidence in repair technique and midwives own practice experience

Over 70% of midwives indicated that their confidence in identification of the perineal tear was a considerable influence on their decision to suture (Table 4.6). The result was similar regardless of the midwives main work type ( $p=0.9$ ) (Figure 4.1). When confidence in identification was considered with years in practice over 70% of midwives indicated that confidence in identification was a considerable influence for all categories of years in practice ( $p=0.5$ ) (Figure 4.2).

Table 4.6

*Degree of influence of factors on decision to suture: confidence in identification*

Degree of influence on Likert scale*	Factor: Confidence in identification	
	Frequency (n=210)	Percentage (%)
1	30	14.3
2	8	3.8
3	22	10.5
4	50	23.8
5	100	47.6

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

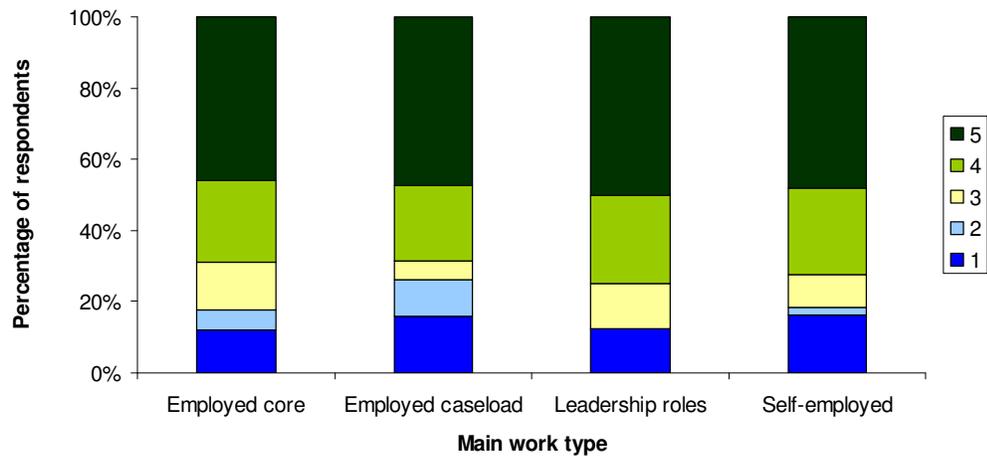


Figure 4.1. Influence of confidence in identification of tear for each main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

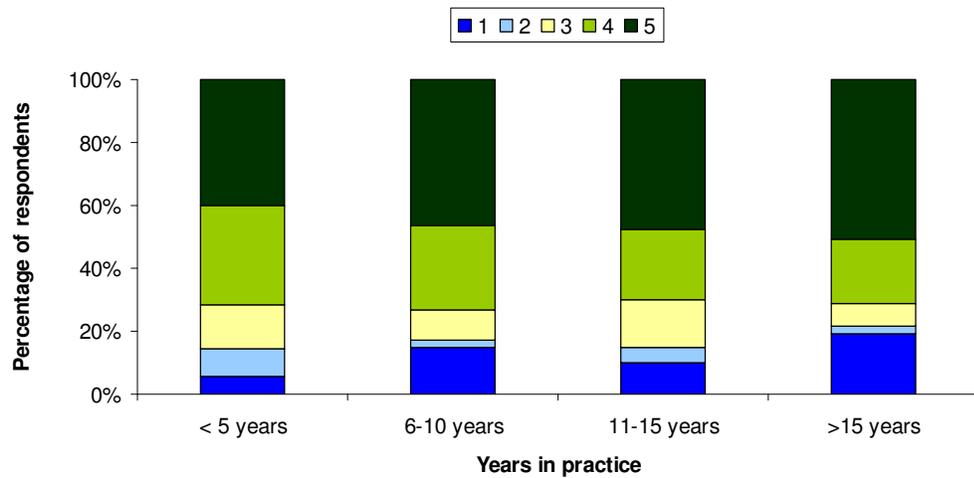


Figure 4.2. Influence of confidence in identification and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

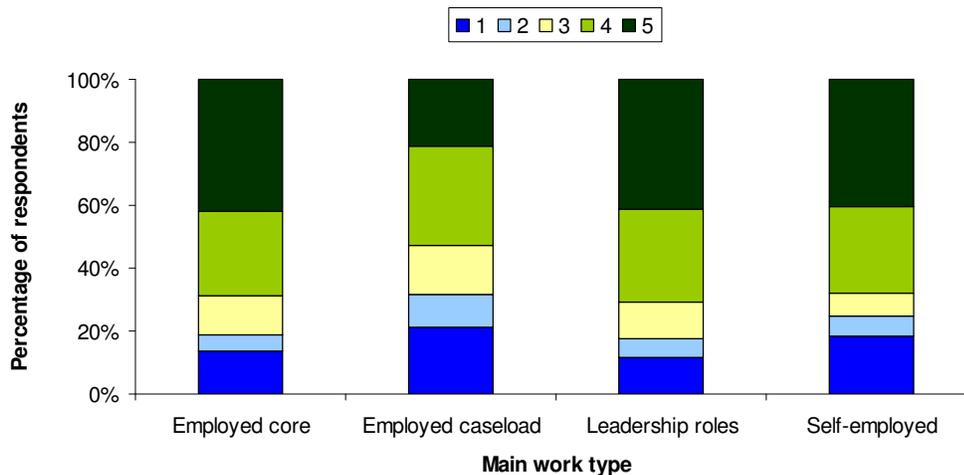
Table 4.7 demonstrates that 68% of midwives rated that confidence in repair technique was a factor of considerable influence. When confidence in repair was considered for each main work type, similar findings were reported with 69% of employed core and 68% of self-employed midwives indicating that their confidence in repair technique was a considerable influence on their decision to suture ( $p=0.9$ ) (Figure 4.3). There was an impact of years in practice on the degree of influence that confidence in repair technique had on their decision ( $p=0.04$ ) (Table 4.8).

Table 4.7

*Degree of influence of factors on decision to suture: confidence in repair technique*

Factor: Confidence in repair technique		
Degree of influence on Likert scale*	Frequency (n=210)	Percentage (%)
1	34	16.2
2	13	6.2
3	21	10.0
4	60	28.6
5	82	39.0

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)



*Figure 4.3. Influence of confidence in repair technique for each main work type on decision to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.8

*Influence of confidence in repair technique and years in practice on decision to suture*

Degree of influence on Likert scale*	Years in practice			
	<5 years n (%)	6-10 years n (%)	11-15 years n (%)	>15 years n (%)
1	2 (5.7)	4 (9.7)	7 (17.5)	21 (22.5)
2	5 (14.2)	1 (2.4)	3 (7.5)	4 (4.3)
3	4 (11.4)	6 (14.6)	5 (12.5)	6 (6.4)
4	8 (22.8)	19 (46.3)	11 (27.5)	22 (23.6)
5	16 (45.7)	11 (26.8)	14 (35.0)	40 (43.0)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test:  $p=0.04$

Table 4.9 demonstrates that 78% of midwives indicated that their own practice experience was a considerable influence on their decision to suture. When practice experience was considered for each main work type there were similar findings with over 75% of employed core and self-employed midwives indicating that their own practice experience had a considerable influence on their decision to suture ( $p=0.7$ ) (Figure 4.4). When practice experience was considered for years in practice there were slight variations but these were not statistically significant ( $p=0.09$ ) (Figure 4.5).

Table 4.9

*Degree of influence of factors on decision to suture: own practice experience*

Degree of influence on Likert scale*	Factor: Own practice experience	
	Frequency (n=210)	Percentage (%)
1	14	6.7
2	11	5.2
3	22	10.5
4	69	32.9
5	94	44.8

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)



Figure 4.4. Influence of practice experience and main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

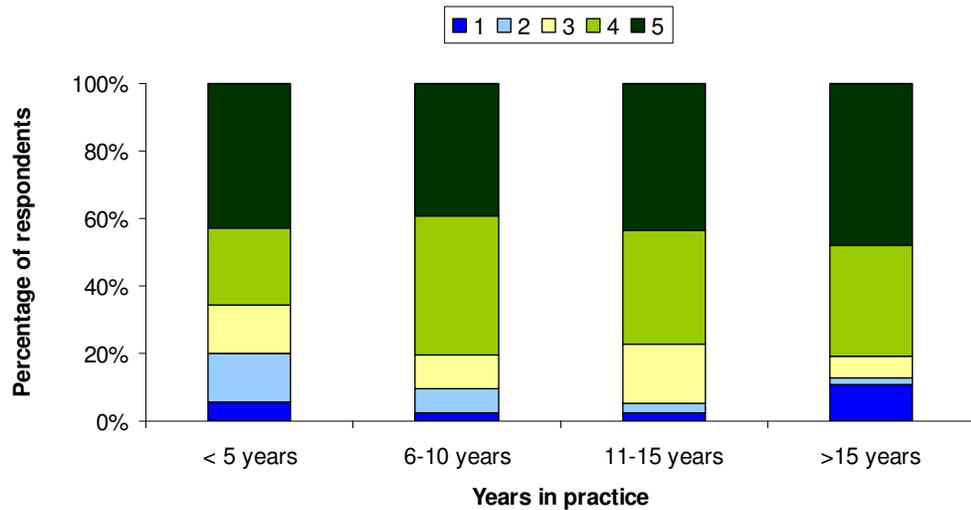


Figure 4.5. Influence of practice experience and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

### 4.3.2 Woman's choice/decision, previous perineal outcome, general health and wellbeing and place of birth

Table 4.10 demonstrates the degree of influence of three factors on the participant's decision to suture; woman's choice/decision, previous perineal outcome, general health and wellbeing, and place of birth. Similar findings for the three factors occurred, with midwives indicating that they all had a considerable influence on their decision to suture.

Table 4.10

*Degree of influence of woman's choice, previous perineal outcomes and woman's general health on the participant's decision to suture.*

Degree of influence on Likert scale*	Factors		
	Woman's choice/decision	Previous perineal outcome	Woman's general health/wellbeing
	n=210 (%)	n= 208 (%)	n= 209 (%)
1	7 (3.3)	41 (19.7)	21 (10.0)
2	27 (12.9)	21 (10.1)	29 (13.9)
3	60 (28.6)	27 (13.0)	42 (20.1)
4	61 (29.0)	51 (24.5)	49 (23.4)
5	55 (26.2)	68 (32.7)	68 (32.5)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

When the influence of the women's choice/decision was considered for each main work type, similar findings occurred regardless of the main work type of the midwife ( $p=0.7$ ) (Figure 4.6). Woman's choice/decision was reported to be a considerable influence on their decision to suture. When woman's choice/decision was considered for years in practice nearly 50% of midwives, regardless of years in practice, indicated that woman's choice/decision was a considerable influence but this was not statistically significant ( $p=0.4$ ) (Figure 4.7).

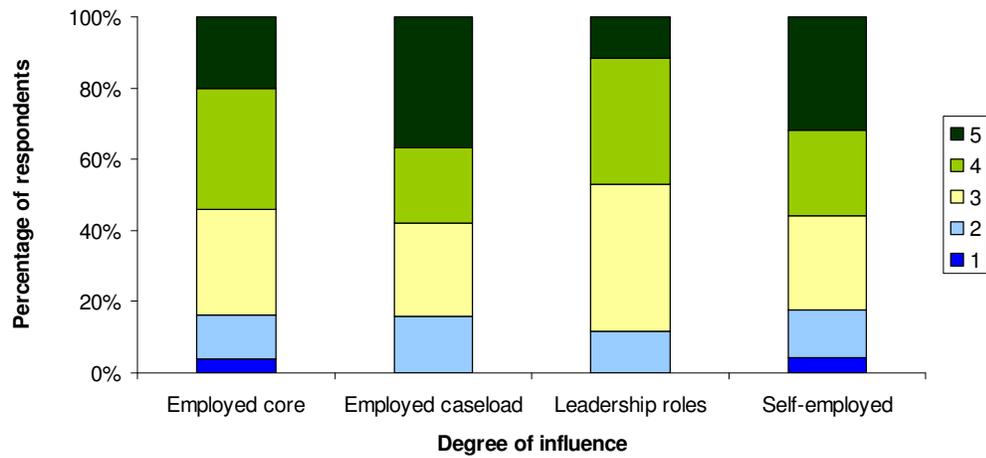


Figure 4.6. Influence of woman's choice/decision for each main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

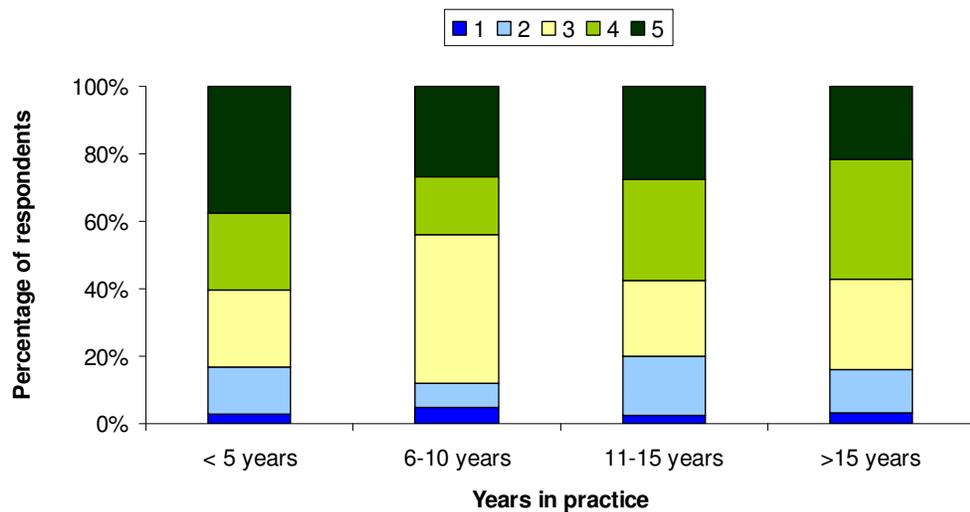


Figure 4.7. Influence of woman's choice/decision and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

When the factor, previous perineal outcome, was considered for each main work type there were 67% of employed core midwives who indicated that the previous perineal outcome was a considerable influence on their decision to suture compared to 52% of self-employed midwives but this was not statistically significant ( $p=0.2$ ) (Figure 4.8).

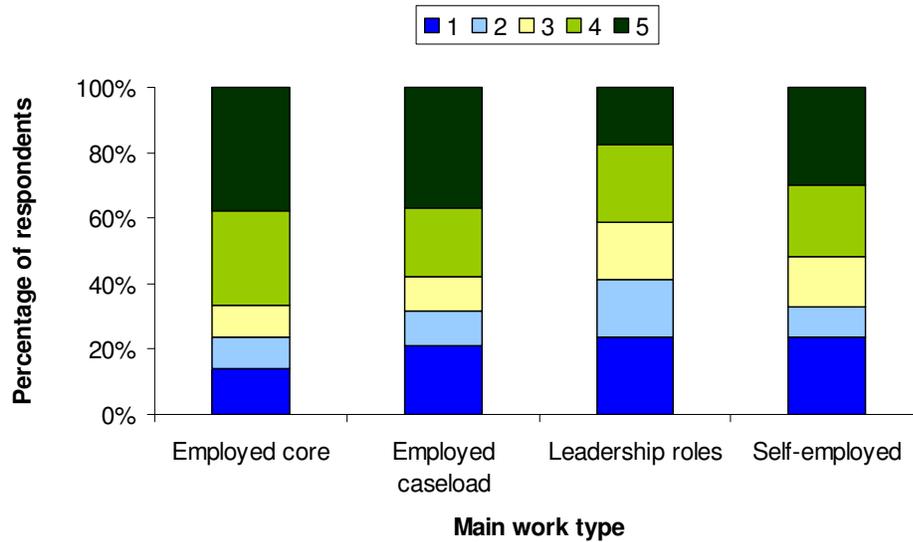


Figure 4.8. Influence of previous perineal outcome for each main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Over 50% of participants indicated that they were considerably influenced by the woman's health and wellbeing (Table 4.10). Figure 4.9 demonstrates that regardless of the main work type, participants indicated that the woman's general health and wellbeing was a considerable influence on their decision to suture the perineal tear. However, 63% of employed core midwives indicated that they were considerably influenced by the woman's health and wellbeing compared to just over 50% of the other three main work types but this was not statistically significant ( $p=0.5$ ).

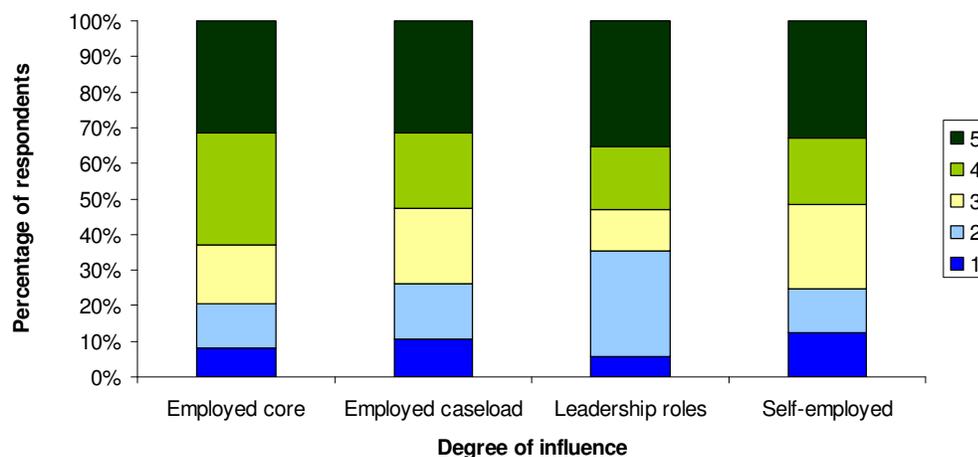


Figure 4.9. Influence of woman's general health and wellbeing for each main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

The majority of midwives (80%) indicated that the place of birth had little influence as a factor for influencing their decision to suture the perineal tear (Table 4.11). However as illustrated in Figure 4.10 when the factor of place of birth was considered for each main work type, there were slight variations with 87% of self-employed midwives indicating that place of birth had little influence compared to 72% of employed core midwives but this difference was not statistically significant ( $p=0.7$ ). When place of birth, was considered for years in practice over 70% of midwives indicated that place of birth had little influence on their decision regardless of their years in practice ( $p=0.6$ ) (Figure 4.11).

Table 4.11

*Degree of influence of factors on decision to suture: Place of birth*

Degree of influence on Likert scale*	Factor	
	Frequency n=211	Percentage %
1	140	66.4
2	28	13.3
3	23	10.9
4	13	6.2
5	7	3.3

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

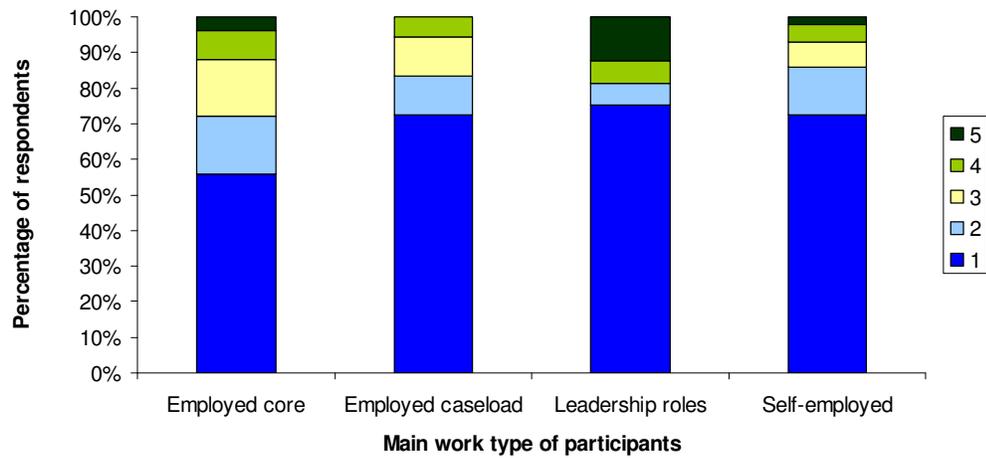


Figure 4.10. Influence of place of birth for each main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

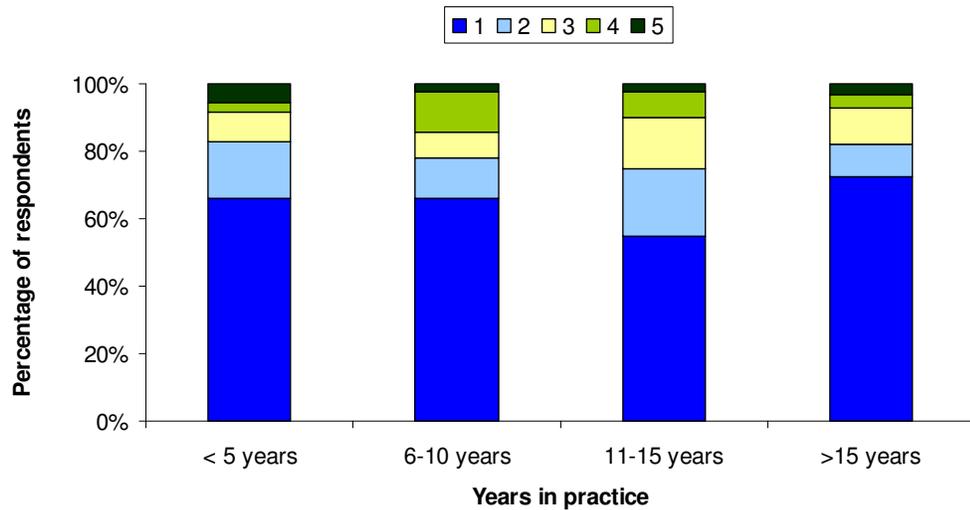


Figure 4.11. Influence of place of birth and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

### 4.3.3 Professional guidelines and hospital policies

As demonstrated in Table 4.12, 45% of midwives indicated that professional guidelines had a considerable influence on their decision to suture. However there were also 29% of midwives who indicated that professional guidelines had little influence on their decision. When the influence of professional guidelines was considered for each main work type there were variations with 59% midwives in the leadership category, 47% of employed core midwives and 41% of self-employed

midwives who indicated that professional guidelines had a considerable influence on their decision to suture but this was not statistically significant ( $p=0.2$ ) (Figure 4.12). Figure 4.13 demonstrates that when the influence of professional guidelines was considered with years in practice, 50% of midwives in the 11-15 year category indicated that professional guidelines had a considerable influence on their decision to suture compared to 40% of midwives in the <5 year category who indicated that professional guidelines had a considerable influence on their decision but this was not statistically significant ( $p=0.9$ ).

Table 4.12

*Degree of influence of factors on decision to suture: Professional guidelines*

Degree of influence on Likert scale*	Factor: Professional guidelines	
	Frequency (n=212)	Percentage (%)
1	38	17.9
2	23	10.8
3	56	26.4
4	60	28.3
5	35	16.5

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

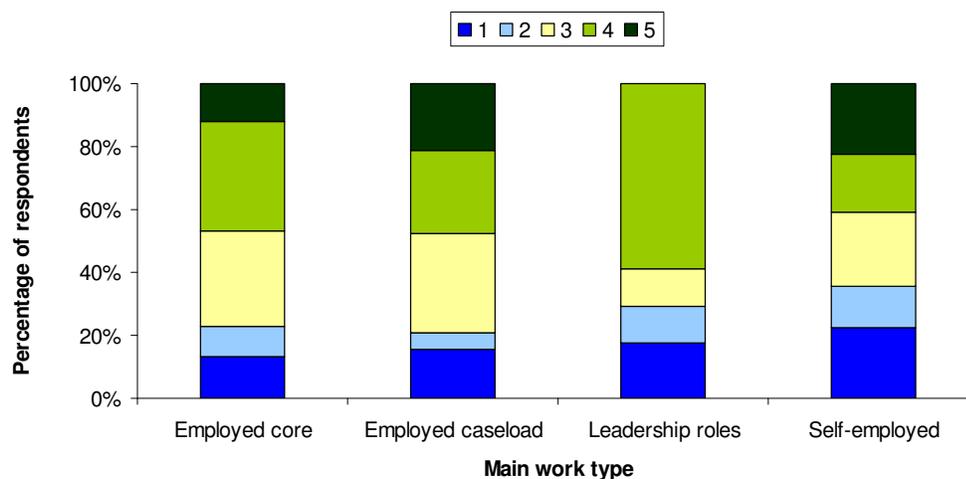


Figure 4.12. Influence of professional guidelines for each main work type on decision to suture.

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

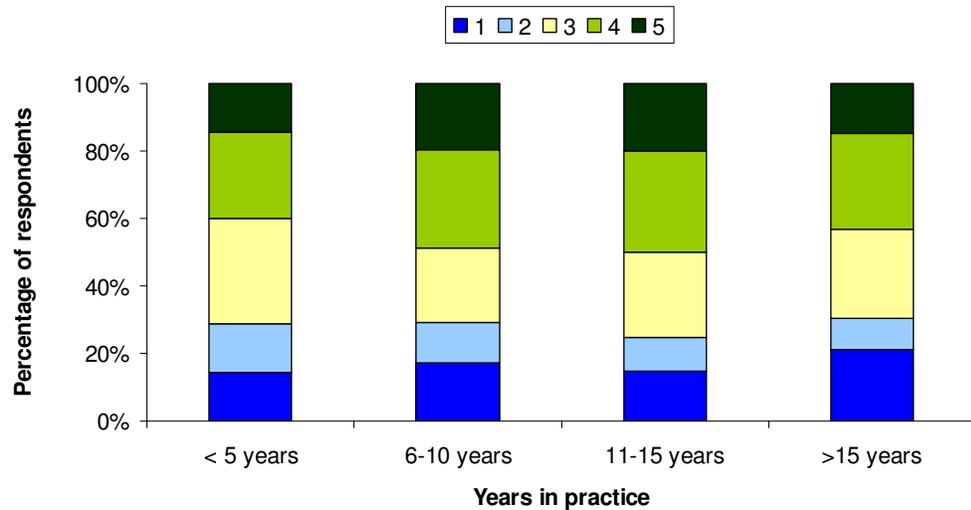


Figure 4.13. Influence of professional guidelines and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.13 demonstrates that over half of the midwives (60%) indicated that hospital policies had little influence on their decision to suture the perineal tear and this was the case regardless of years in practice (Figure 4.14). There was an impact of the midwives main work type on the degree of influence that hospital policies had on the decision to suture ( $p=0.02$ ) (Table 4.14).

Table 4.13

*Degree of influence of factors on decision to suture: hospital policies*

Factor: Hospital policies		
Degree of influence on Likert scale*	Frequency (n=208)	Percentage (%)
1	89	42.8
2	35	16.8
3	47	22.6
4	26	12.5
5	11	5.3

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

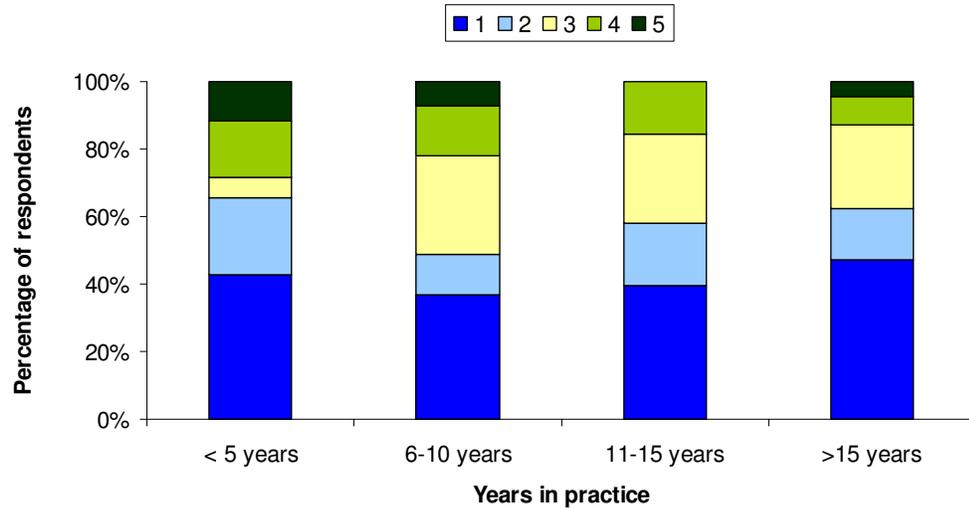


Figure 4.14. Influence of hospital policies and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.14

Influence of hospital policies for each main work type on decision to suture

Degree of influence on Likert scale*	Main work type			
	Employed DHB core	Employed		Self-employed case load
		DHB case load	Leadership roles	
n (%)	n (%)	n (%)	n (%)	
1	21 (42.6)	6 (33.3)	6 (35.2)	55 (57.8)
2	11 (14.6)	2 (11.1)	7 (41.1)	14 (14.7)
3	22 (29.3)	6 (33.3)	2 (11.7)	16 (16.8)
4	15 (20.0)	2 (11.1)	2 (11.7)	7 (7.3)
5	6 (8.0)	2 (11.1)	0 (0.0)	3 (3.1)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test: p=0.02

#### 4.3.4 Evidence from research and litigation fears

Table 4.15 illustrates that the majority (65%) of midwives indicated that they were considerably influenced by evidence from research, while 14% reported that this had little influence on their decision to suture. When the influence of evidence from research was considered for each of the main work types the majority (68%) of employed core midwives and 57% of self-employed caseload stated they were

considerably influenced by evidence from research in their decision to suture ( $p=0.5$ ) (Figure 4.15).

When evidence from research was considered with years in practice there were 73% of the midwives in the practice category of 6-10 years indicated that they were considerably influenced by evidence from research. Similar findings (63%) occurred for the other three practice year categories indicating that evidence from research was a considerable influence but there was no impact from years in practice ( $p=0.7$ ) (Figure 4.16).

Table 4.15

*Degree of influence of factors on decision to suture: Evidence from research*

Factor: Evidence from research		
Degree of influence on Likert scale*	Frequency (n=212)	Percentage (%)
1	11	5.2
2	19	9.0
3	45	21.2
4	71	33.5
5	66	31.1

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

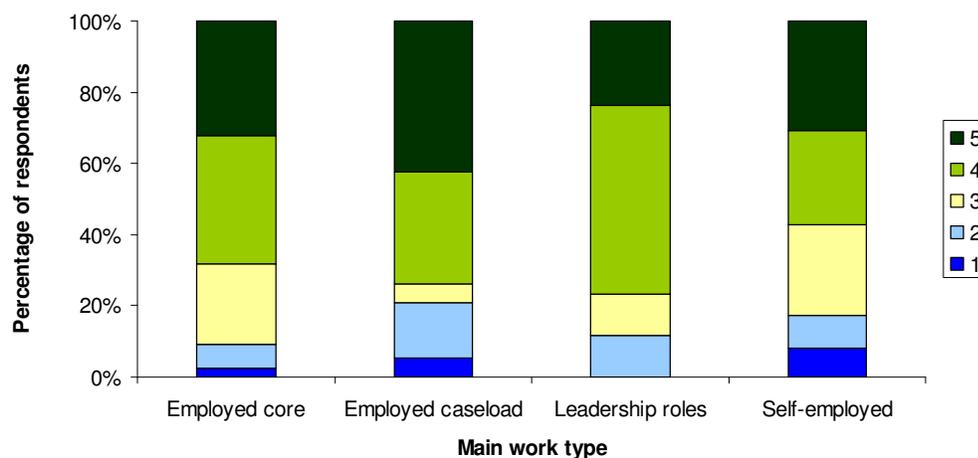


Figure 4.15. *Influence of evidence from research for each main work type on decision to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

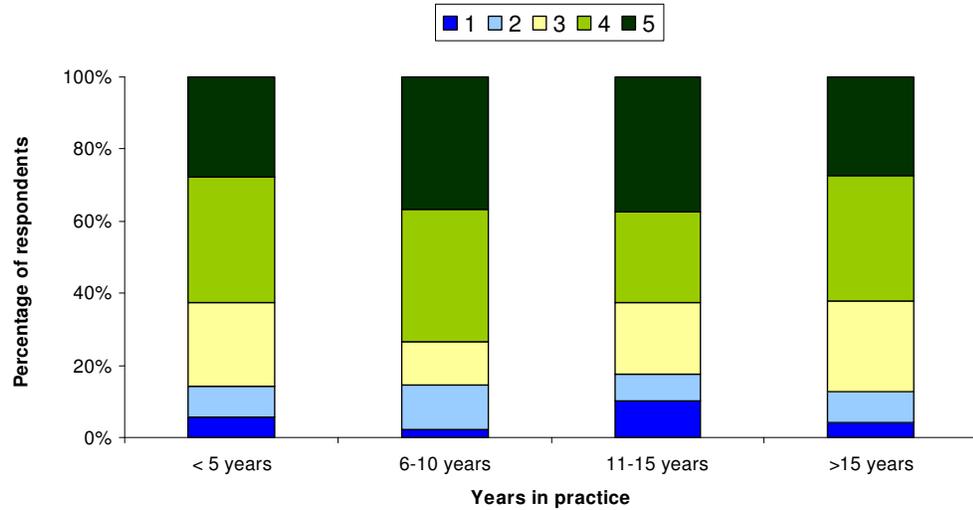


Figure 4.16. Influence of evidence from research and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

The majority of participants (69%) indicated that litigation fears had little influence on their decision to suture (Table 4.16) with only 15% indicating that litigation fears had a considerable influence on their decision to suture. However there was a trend which suggested that more self-employed midwives than employed core midwives (72% vs. 62%) stated that litigation fears had little influence on their decision but this was not statistically significant ( $p=0.1$ ) (Figure 4.17).

When litigation fears were considered for years in practice there was a trend which suggested that as years in practice increased the influence of litigation fears had less influence on the decision. However there were fewer midwives in the 11-15 year practice category who stated that litigation fears had no or little influence on their decision to suture and overall the differences were not statistically significant ( $p=0.5$ ) (Figure 4.18).

Table 4.16

*Degree of influence of factors on decision to suture: Litigation fears*

Factor: Litigation fears		
Degree of influence on Likert scale*	Frequency (n=211)	Percentage (%)
1	92	43.6
2	53	25.1
3	35	16.6
4	18	8.5
5	13	6.2

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

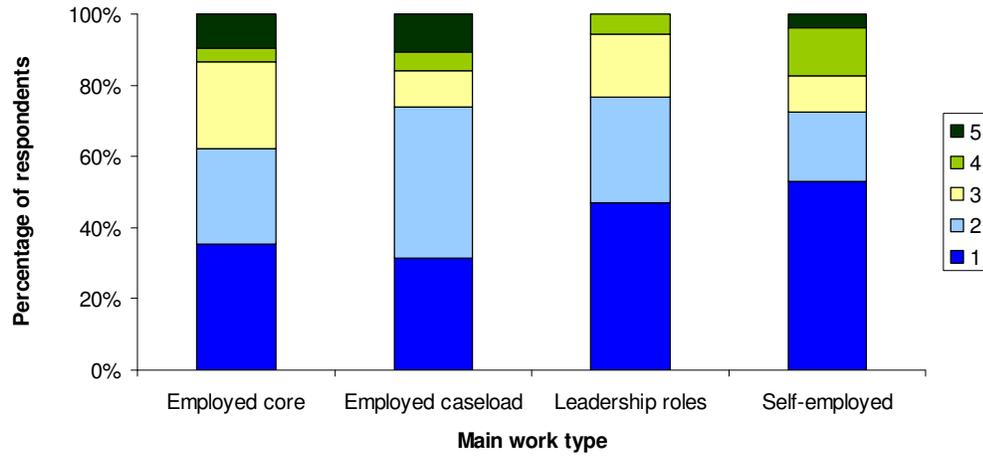


Figure 4.17. Influence of litigation fears and main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

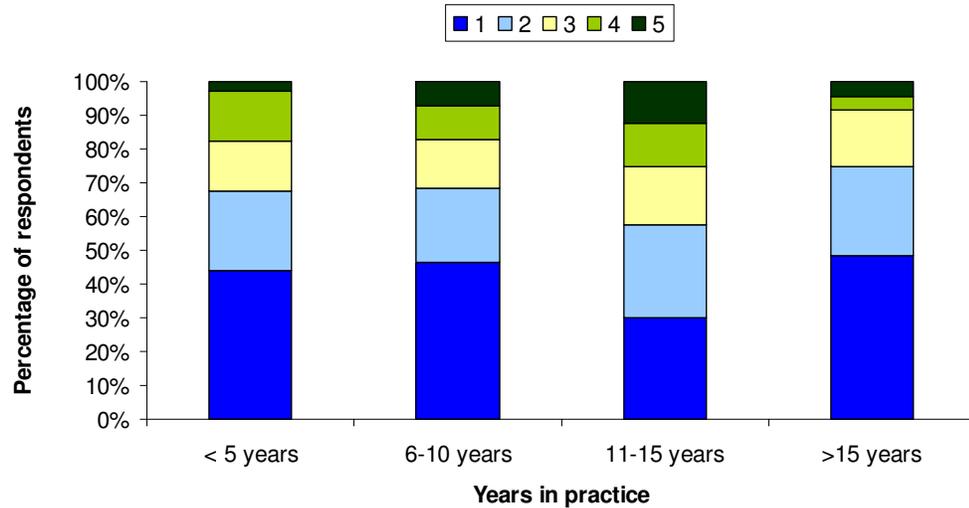


Figure 4.18. Influence of litigation fears and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

#### 4.3.5 Peer pressure and continuity of carer

A significant number of midwives (76%) indicated that peer pressure had little influence on their decision to suture (Table 4.17). As demonstrated in Figure 4.19 when the influence of peer pressure was considered with years in practice there appeared to be little difference, with over 70% of midwives in each category of practice years indicating that peer pressure had no or little influence on their decision to suture ( $p=0.5$ ). However when peer pressure was considered for each main work type there appeared to be slight variations but these were not statistically significant. The majority of self-employed midwives (80.5%) indicated that peer pressure had little influence on their decision to suture, while 65% of employed core midwives indicated that peer pressure had little influence ( $p=0.09$ ) (Figure 4.20).

Table 4.17

*Degree of influence of factors on decision to suture: Peer pressure*

Factor: Peer pressure		
Degree of influence on Likert scale*	Frequency (n=212)	Percentage (%)
1	125	59.0
2	37	17.4
3	43	20.3
4	5	2.4
5	2	0.9

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

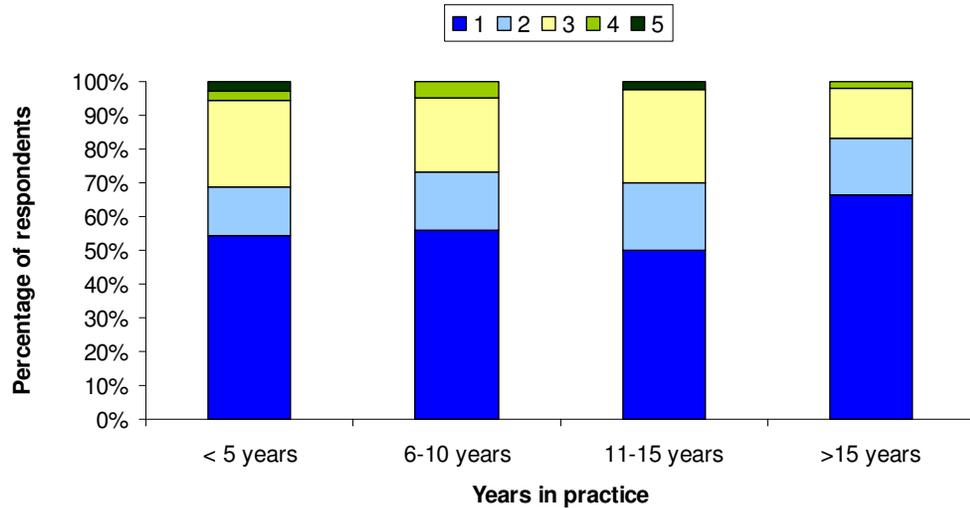


Figure 4.19. Influence of peer pressure and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

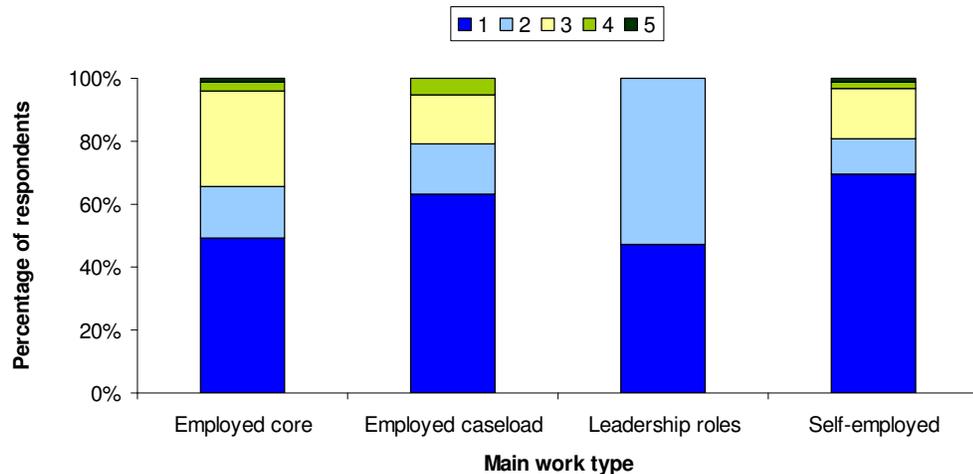


Figure 4.20. Influence of peer pressure and main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.18 demonstrates that 57% of participants indicated that continuity of carer had little influence on their decision to suture whilst 27% stated that it had a considerable influence. When the factor of continuity of carer was considered for practice setting, urban or rural, there were similar results for both settings. Over 55% of midwives indicated that continuity of carer had little influence on the decision to suture despite their practice setting (p=0.8).

When continuity of carer was considered for each main work type, continuity of carer was reported as having little influence on their decision to suture regardless of

the midwives' main work type. Similar findings were reported with 58% of employed core and 61% of self-employed midwives indicated that continuity of carer had little influence on their decision to suture the perineal tear (Figure 4.21). However 18% of employed core midwives compared to 31% of self-employed midwives reported that continuity of carer had a considerable influence on their decision to suture but this was not statistically significant ( $p=0.2$ ).

Figure 4.22 demonstrates that when continuity of carer was considered for years in practice, 40% of midwives in the 11-15 year category indicated that continuity of carer had little influence compared to over 60% in the other practice year categories ( $p=0.1$ ).

Table 4.18

*Degree of influence of factors on decision to suture: Continuity of carer*

<b>Factor: Continuity of carer</b>		
<b>Degree of influence on Likert scale*</b>	<b>Frequency (n=209)</b>	<b>Percentage (%)</b>
1	94	45.0
2	24	11.5
3	34	16.3
4	26	12.4
5	31	14.8

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

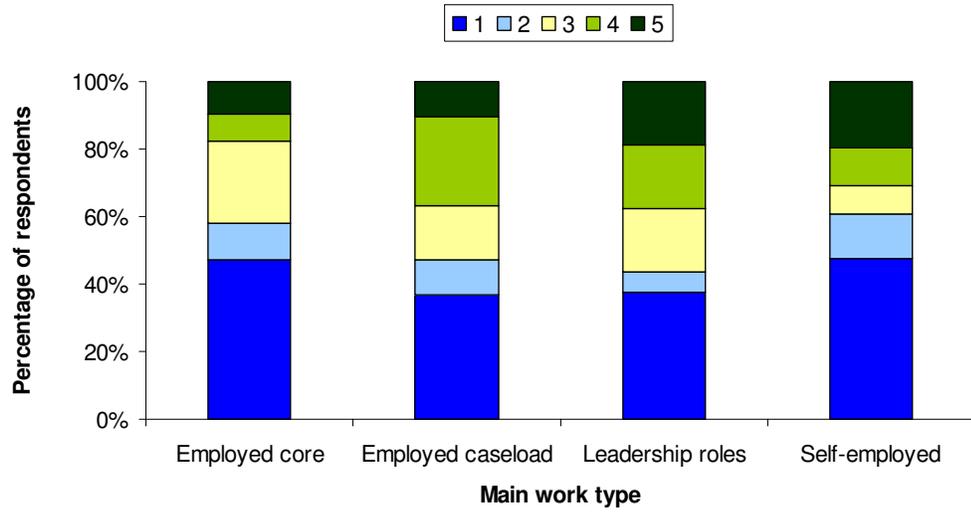


Figure 4.21. Influence of continuity of carer and main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

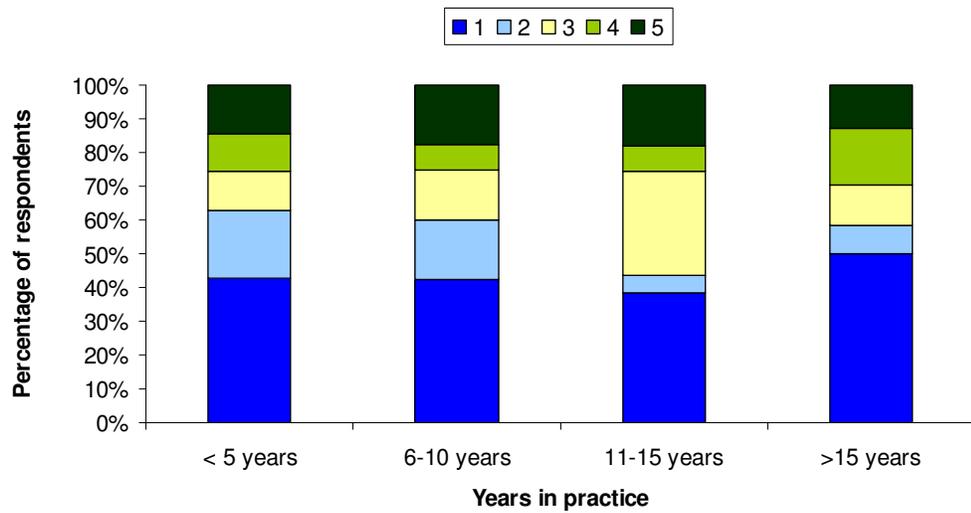


Figure 4.22. Influence of continuity of carer and years in practice on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

#### 4.3.6 Skin to skin contact and time restraints

As demonstrated in Table 4.19, 65% of midwives indicated that skin to skin contact had little influence on their decision to suture the perineal tear.

Table 4.19

*Degree of influence of factors on decision to suture: Skin to skin contact*

Degree of influence on Likert scale*	Factor: Skin to skin contact	
	Frequency (n=204)	Percentage (%)
1	109	53.4
2	23	11.3
3	35	17.2
4	14	6.9
5	23	11.3

The majority of midwives (81%) indicated that time restraints had little influence on their decision to suture (Table 4.20). There was no association when the influence of time restraints was considered with the practice setting, urban or rural, of the midwife. When the influence of time restraints was considered for years in practice variations occurred between groups that were statistically significant ( $p=0.05$ ) (Table 4.21). The majority of self-employed midwives (90%) indicated that time restraints had little influence on their decision to suture compared to 68% of employed core midwives (Figure 4.23), although the differences were not statistically different ( $p=0.1$ ).

Table 4.20

*Degree of influence of factors on decision to suture: Time restraints*

Degree of influence on Likert scale*	Factor: Time restraints	
	Frequency (n=212)	Percentage (%)
1	140	66.0
2	32	15.1
3	22	10.3
4	6	2.8
5	12	5.6

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.21

*Influence of time restraints and years in practice on decision to suture*

Degree of influence on Likert scale*	Years in practice			
	<5 years	6-10 years	11-15 years	>15 years
	n (%)	n (%)	n (%)	n (%)
1	20 (57.1)	27 (65.8)	23 (57.5)	69 (72.6)
2	5 (14.2)	10 (24.3)	7 (17.5)	10 (10.5)
3	4 (11.4)	1 (2.4)	7 (17.5)	10 (10.5)
4	4 (11.4)	1 (2.4)	0 (0.0)	1 (1.0)
5	2 (5.7)	2 (4.8)	3 (7.5)	5 (5.2)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test: p=0.05

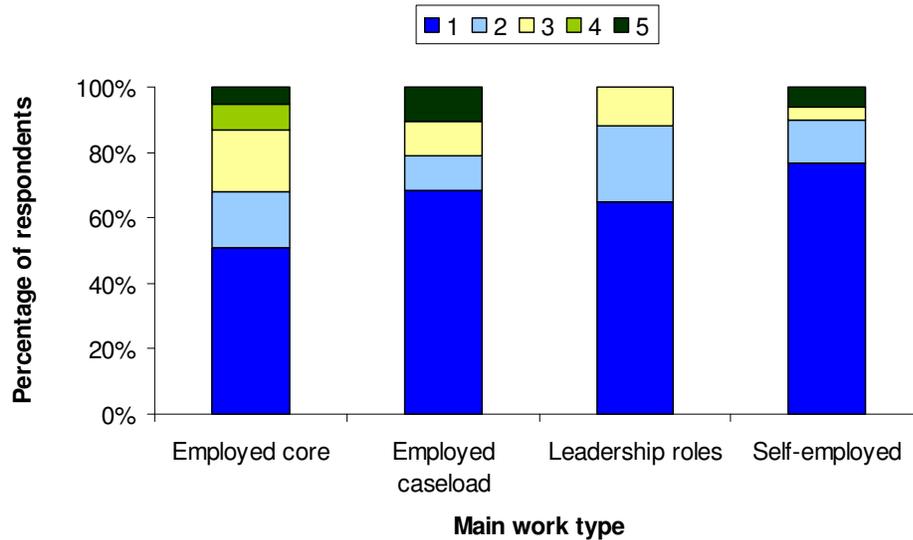


Figure 4.23. Influence of time restraints for each main work type on decision to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Figures 4.24-26 demonstrate an overview of all 15 factors and the degree of influences that midwives attributed to their decision to suture the perineal tear. The majority of midwives indicated that each of the following six factors had a considerable influence on their decision: own practice experience (78%), confidence in identification (71%), confidence in repair technique (68%), evidence from research (65%), previous perineal outcome (57%) and woman's general health and wellbeing (56%). The majority of midwives indicated that each of the following three factors had little influence in their decision to suture: time restraints (81%), place of birth (80%), and peer pressure (76%).

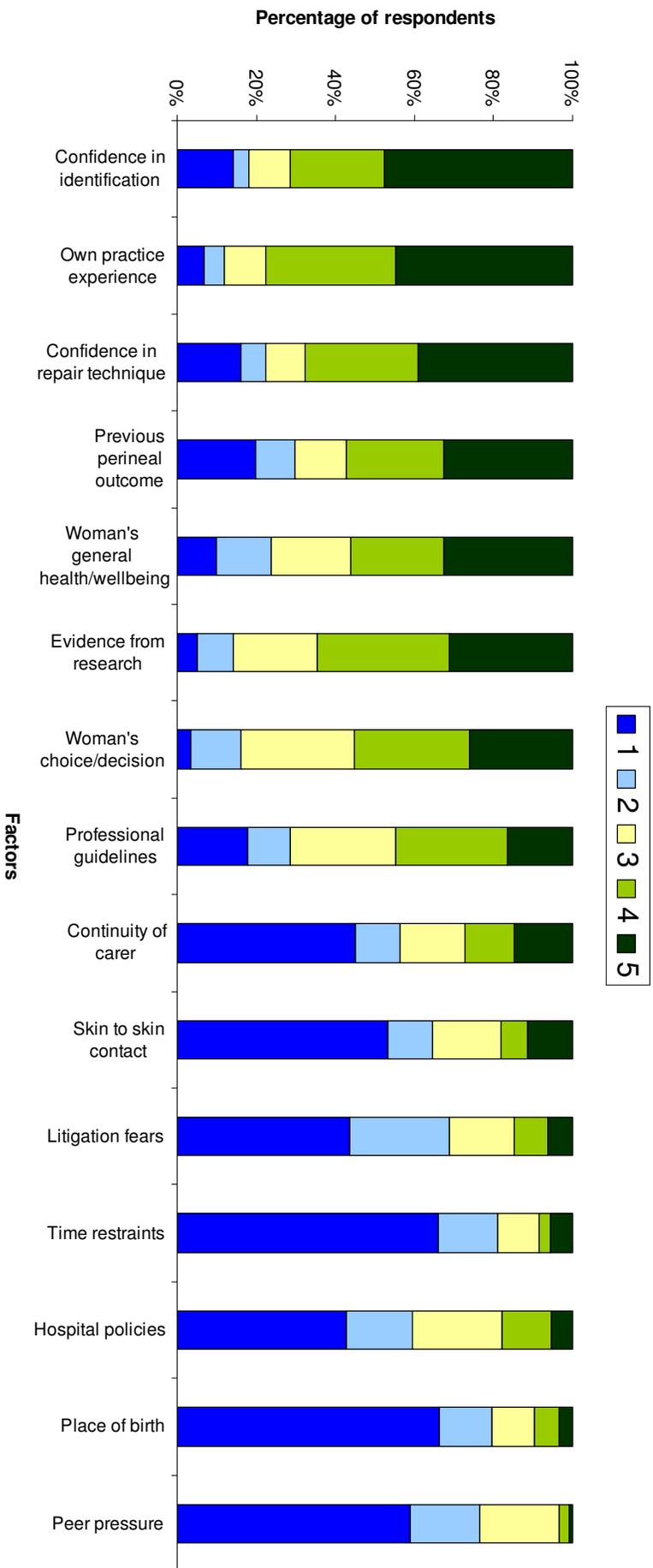
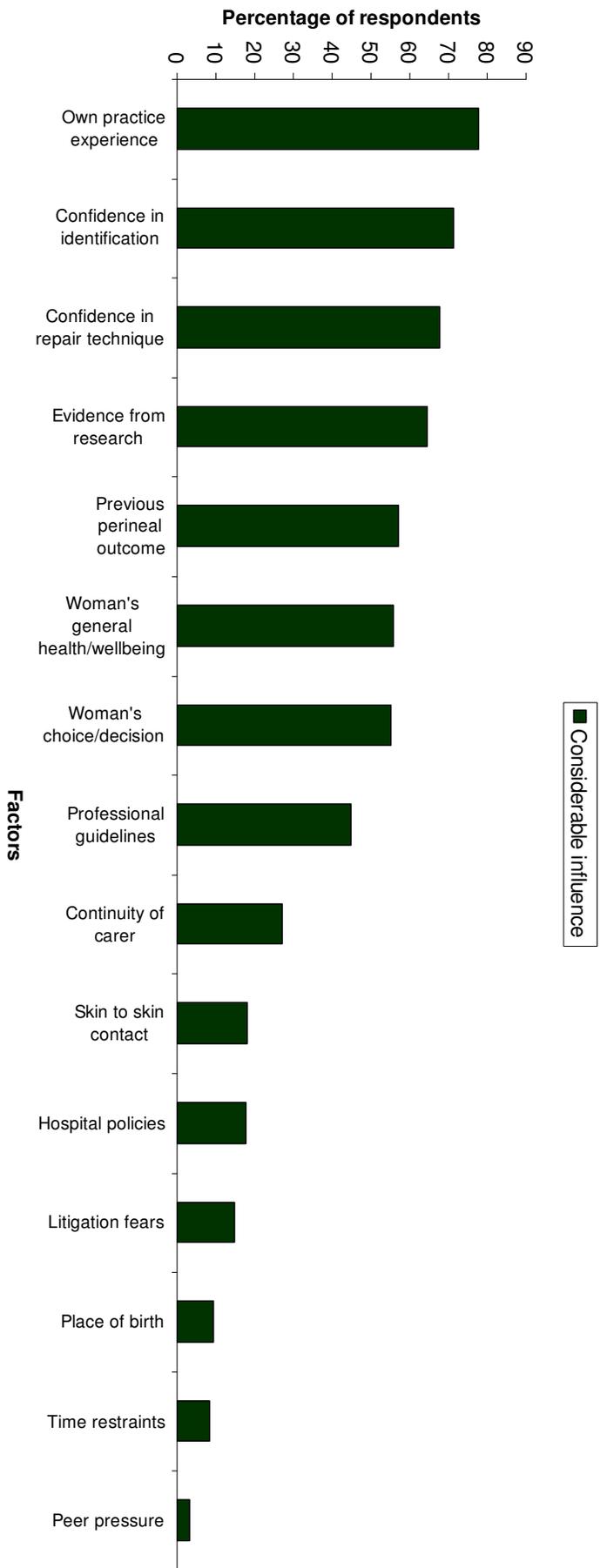


Figure 4.24. Factor categories and degree of influence on decision to suture (placed in order of strongest influence)

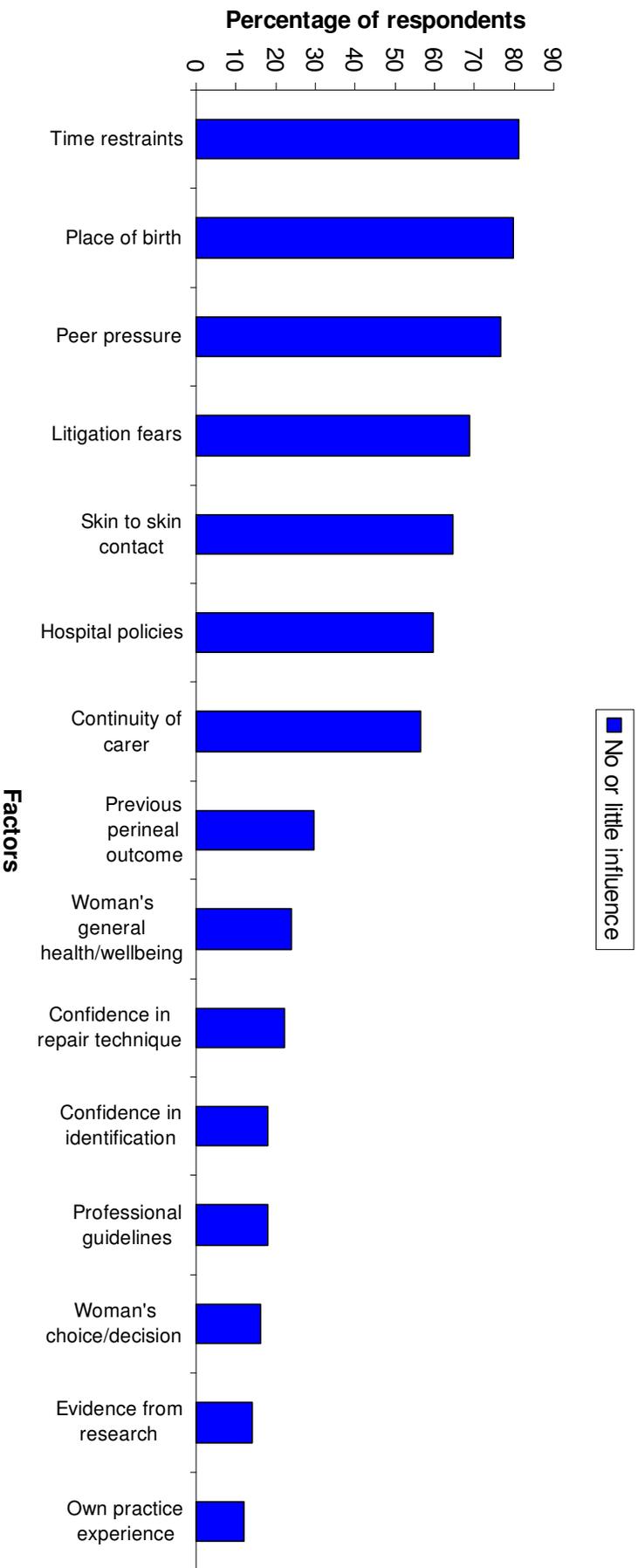
Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence).



*Figure 4.25. Factor categories and degree of considerable influence on decision to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Grouped for analysis: Likert scale 4 & 5 = Considerable influence.



*Figure 4.26. Factor categories and degree of no or little influence on decision to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Grouped for analysis: Likert scale 1 & 2 = Little influence.

#### **4.4 Factors that influenced midwives decision not to suture**

Midwives were asked to recall two separate perineal assessments on two different women, one were they decided to suture and the other not to suture. Although they were asked to complete two separate questions on the questionnaire the results have shown that for the majority of the midwives there were similar findings. Therefore, the next section, which reports on the factors which influenced midwives in their decision not to suture the identified perineal tear, is presented in a manner which summarises the results and highlights the points of difference on the decision not to suture.

The denominator varies throughout the presentation of the results as not all midwives answered all of the questions. Throughout the presentation of the results the sum of categories 1 and 2 of the Likert scale represent *little influence* and the sum of categories 4 and 5 on the Likert represent a *considerable influence*.

##### **4.4.1 Confidence in identification, confidence in repair technique and midwives own practice experience**

Table 4.22 demonstrates the influence of three factors on the participant's decision not to suture the perineal tear; confidence in identification (78%), confidence in repair technique (54%) and the midwives own practice experience (77%). All three factors were influential with over 50% of midwives indicating that each factor had a considerable influence on their decision not to suture. Confidence in repair technique was the least influential factor of the three.

Table 4.22

*Influence of confidence in identification, confidence in repair technique and own practice experience on decision not to suture.*

Degree of influence on Likert scale*	Factors		
	Confidence in identification n=207 (%)	Confidence in repair technique n= 207 (%)	Own practice experience n= 209 (%)
1	28 (13.5)	59 (28.5)	20 (9.6)
2	12 (5.8)	12 (5.8)	8 (38)
3	6 (2.9)	25 (12.1)	21 (10.0)
4	27 (13.0)	31 (15.0)	49 (23.4)
5	134 (64.7)	80 (38.6)	111 (53.1)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

When all three factors were considered for years in practice there were two significant findings. There was an impact of years in practice on the degree that confidence in the repair technique ( $p=0.03$ ) (Table 4.23) and that the midwives own practice experience had on the decision not to suture ( $p=0.04$ ) (Table 4.24). Confidence in identification of the tear had no significance ( $p=0.5$ ).

Table 4.23

*Influence of confidence in repair technique and years in practice on decision not to suture*

Degree of influence on Likert scale*	Years in practice			
	<5 years n (%)	6-10 years n (%)	11-15 years n (%)	>15 years n (%)
1	8 (22.8)	12 (30.0)	14 (35.0)	25 (27.4)
2	5 (14.2)	0 (0.0)	1 (2.5)	6 (6.5)
3	4 (11.4)	10 (25.0)	4 (10.00)	7 (7.6)
4	5 (14.2)	7 (17.5)	9 (22.5)	10 (10.9)
5	13 (37.1)	11 (27.5)	12 (30.0)	43 (47.2)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test:  $p=0.03$

Table 4.24

*Influence of practice experience and years in practice on decision not to suture*

Degree of influence on Likert scale*	Years in practice			
	<5 years	6-10 years	11-15 years	>15 years
	n (%)	n (%)	n (%)	n (%)
1	5 (14.2)	7 (17.5)	2 (5.0)	6 (6.4)
2	3 (8.5)	2 (5.0)	1 (2.5)	2 (2.1)
3	5 (14.2)	6 (15.0)	6 (15.0)	4 (4.3)
4	6 (17.1)	10 (25.0)	13 (32.5)	20 (21.5)
5	16 (45.7)	15 (37.5)	18 (45.0)	61 (65.5)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test:  $p=0.04$

Figure 4.27 demonstrates that when confidence in identification ( $p=0.8$ ), confidence in repair technique ( $p=0.6$ ) and the midwives own practice experience ( $p=0.8$ ) were considered for each main work type, similar findings were reported regardless of the midwives main work type.

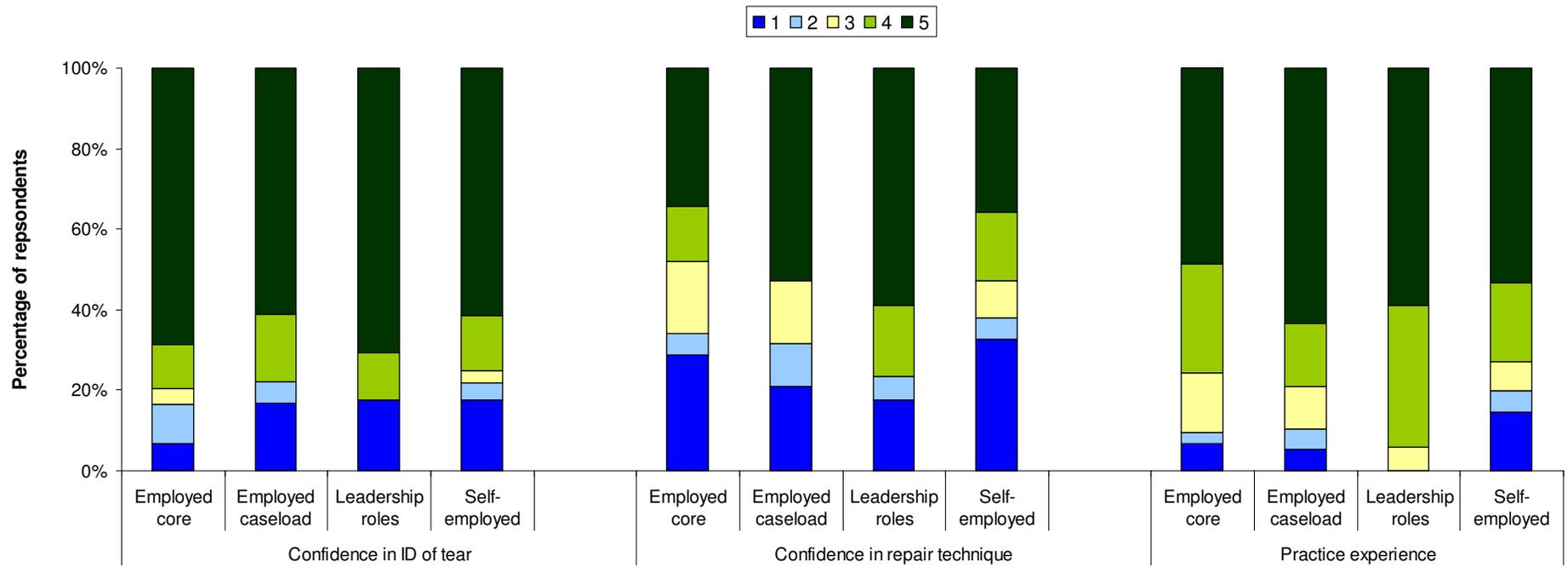


Figure 4.27. Influence of confidence in identification of degree of tear, confidence in repair technique and practice experience and main work type on decision not to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

#### 4.4.2 Woman's choice/decision, previous perineal outcome, general health and wellbeing and place of birth

Table 4.25 demonstrates the influence of three factors on the participant's decision not to suture the perineal tear; woman's choice/decision, previous perineal outcome, general health and wellbeing and place of birth. All three factors were influential with over 55% of midwives indicating that each factor had a considerable influence on their decision not to suture. Woman's choice/decision was the most influential and previous perineal outcome was the least influential factor.

Table 4.25

*Influence of woman's choice, previous perineal outcomes and woman's general health on decision not to suture.*

Degree of influence on Likert scale*	Factors		
	Woman's choice/decision n=205 (%)	Previous perineal outcome n=199 (%)	Woman's general health/wellbeing n=206 (%)
1	11 (5.4)	35 (17.6)	20 (9.7)
2	19 (9.3)	18 (8.3)	19 (9.2)
3	49 (23.9)	37 (18.6)	45 (21.8)
4	47 (22.9)	42 (21.1)	45 (21.8)
5	79 (38.5)	67 (33.7)	77 (37.4)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Figure 4.28 demonstrates that the degree of influence was not different for different main work types with respect woman's choice/decision ( $p=0.4$ ) and woman's general health and wellbeing ( $p=0.3$ ). However there was an impact of the midwives main work type on the degree of influence that the woman's previous perineal outcome had on the decision not to suture ( $p=0.04$ ) (Table 4.26).

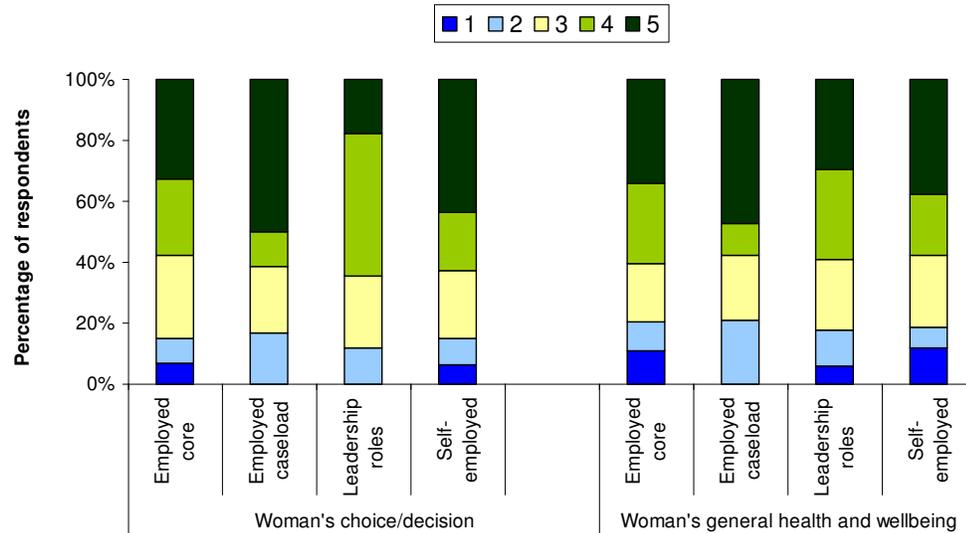


Figure 4.28. Influence of woman's choice/decision and woman's general health for each main work type on decision not to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.26

Degree of influence of previous perineal outcomes for each main work type in decision not to suture

Degree of influence on Likert scale*	Main work type			
	Employed	Employed	Leadership	Self-employed
	DHB core n (%)	DHB case load n (%)	roles n (%)	case load n (%)
1	9 (12.5)	2 (10.5)	1 (6.25)	23 (25.8)
2	7 (9.7)	2 (10.5)	4 (25.0)	5 (5.6)
3	15 (20.8)	4 (21.0)	3 (18.75)	15 (16.8)
4	19 (26.3)	3 (15.7)	6 (37.5)	13 (14.6)
5	22 (30.5)	8 (42.1)	2 (12.5)	33 (37.0)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test: p=0.04

There was no significant impact of years in practice on woman's choice/decision (p=0.1), previous perineal outcomes (p=0.9) and woman's general health (p=0.7).

Table 4.27 demonstrates that the majority of midwives (80%) indicated that the place of birth had little influence as a factor on their decision not to suture the perineal tear. The data is comparable with the findings related to the influence of place of birth on decision-making to suture. As demonstrated in Figure 4.29 when the factor of place of birth was considered for each main work type ( $p=0.9$ ), the majority of midwives, over 75%, indicated that the place of birth had no or little influence on their decision not to suture regardless of the main work type.

Table 4.27

*Degree of influence of factors on decision not to suture: place of birth*

Degree of influence on Likert scale*	Factor: Place of birth	
	Frequency (n=209)	Percentage (%)
1	140	67.0
2	27	12.9
3	21	10.0
4	8	3.8
5	13	6.2

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

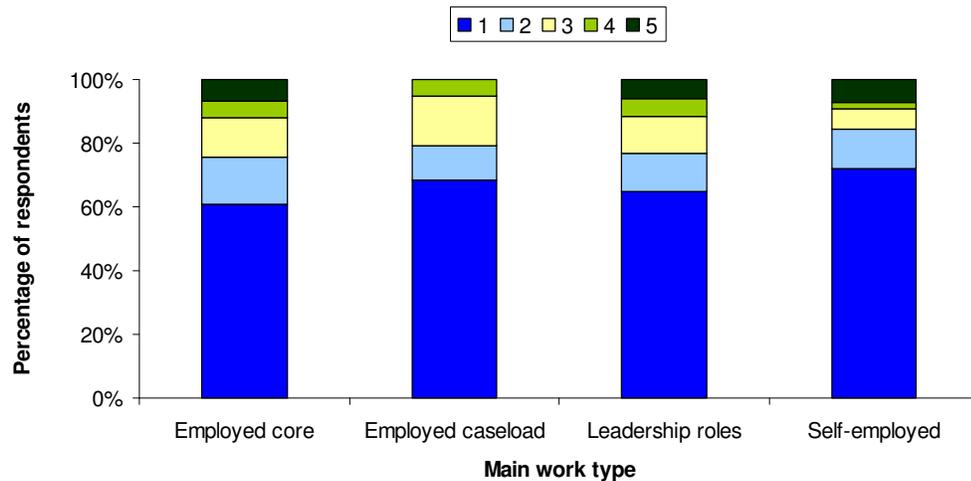


Figure 4.29. Influence of place of birth for each main work type on decision not to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

### 4.4.3 Professional guidelines and hospital policies

Table 4.28 demonstrates that both professional guidelines and hospital policies had little influence on the participant's decision not to suture the perineal tear although hospital policies were less influential.

Figure 4.30 demonstrates that when the influence of professional guidelines was considered for each main work type, slight variations occurred but these were not statistically significant ( $p=0.4$ ). However there was a significant impact of the main work type on the degree of influence that hospital policies had on their decision not to suture ( $p<0.001$ ) (Table 4.29).

There was no significant impact of years in practice on professional guidelines ( $p=0.8$ ) and hospital policies ( $p=0.6$ ). Hospital policies had the least influence on the participant's decision not to suture regardless of years in practice (Figure 4.31).

Table 4.28

*Degree of influence of factors on decision not to suture: Professional guidelines and hospital policies.*

Degree of influence on Likert scale*	Factors	
	Professional guidelines n=209 (%)	Hospital policies n= 207 (%)
1	53 (25.4)	94 (45.4)
2	31 (14.8)	32 (15.5)
3	59 (28.2)	50 (24.2)
4	42 (20.1)	20 (9.7)
5	24 (11.5)	11 (5.3)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

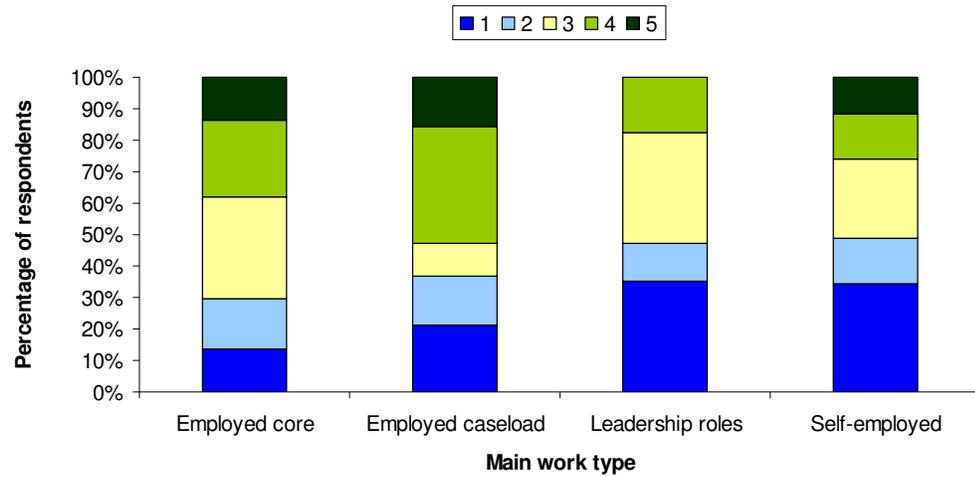


Figure 4.30. Influence of professional guidelines for each main work type on decision not to suture.

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Table 4.29

Influence of hospital policies for each main work type on decision not to suture

Degree of influence on Likert scale*	Main work type			
	Employed DHB core n (%)	Employed DHB case load n (%)	Leadership roles n (%)	Self-employed case load n (%)
1	17 (22.9)	6 (31.5)	7 (41.1)	64 (68.0)
2	16 (21.6)	3 (15.7)	5 (29.4)	7 (7.4)
3	22 (29.7)	4 (21.0)	3 (17.6)	19 (20.2)
4	13 (17.5)	5 (26.3)	2 (11.7)	0 (0.0)
5	6 (8.1)	1 (5.2)	0 (0.0)	4 (4.2)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

\*\*Chi-squared test:  $p < 0.001$

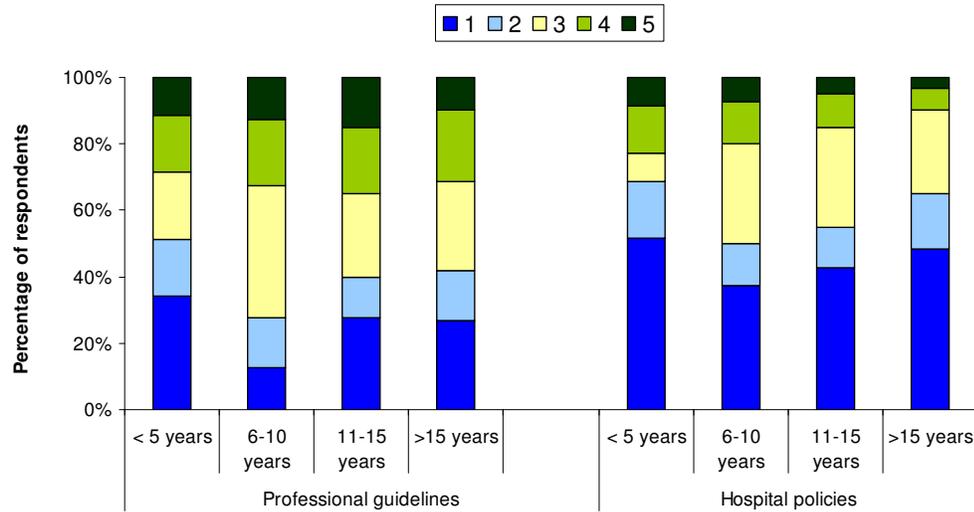


Figure 4.31. Influence of professional guidelines and hospital policies and years in practice on decision not to suture.

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

#### 4.4.4 Evidence from research and litigation fears

Table 4.30 demonstrates that just over half of the midwives indicated that evidence from research was a considerable influence on their decision. The majority of midwives (74%) indicated that litigation fears had little influence on their decision not to suture (Table 4.30).

Table 4.30

*Degree of influence of factors on decision not to suture: evidence from research and litigation fears.*

Degree of influence on Likert scale*	Factors	
	Evidence from research n=204 (%)	Litigation fears n= 207 (%)
1	18 (8.8)	115 (55.6)
2	19 (9.3)	39 (18.8)
3	46 (22.5)	35 (16.9)
4	58 (28.4)	12 (5.8)
5	63 (30.8)	6 (2.9)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

When litigation fears were considered for each main work type more self-employed than employed midwives (82% vs. 45%) indicated that litigation fears had no or little influence in their decision ( $p=0.5$ ) (Figure 4.32). The figure also shows that over 50% of midwives indicated that evidence from research was considerably influential and there was no difference between main work types on their decision not to suture ( $p=0.6$ ).

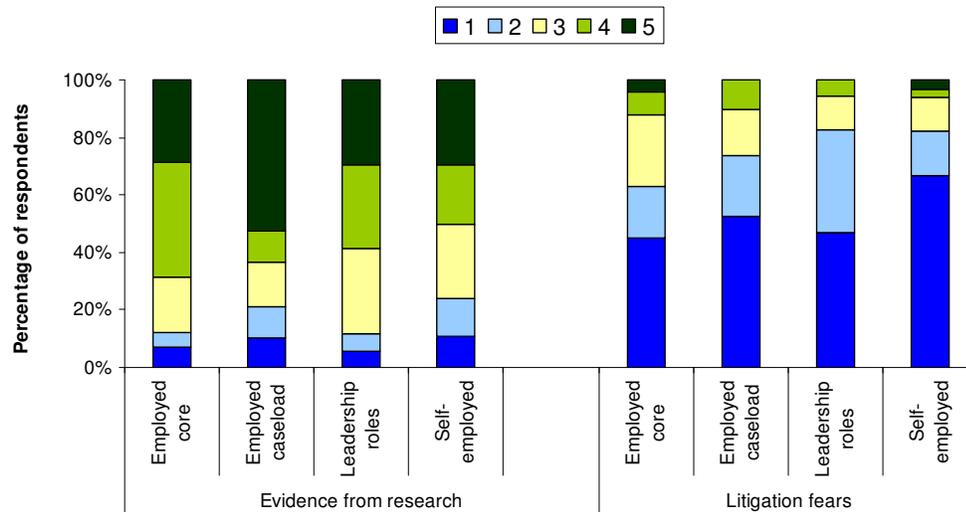


Figure 4.32. *Influence of evidence from research and litigation fears for each main work type on decision not to suture.*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Figure 4.33 demonstrates that when evidence from research ( $p=0.5$ ) and litigation fears ( $p=0.3$ ) was considered for years in practice there were no significant findings however over 50% of midwives reported that evidence from research was a considerable influence in their decision not to suture regardless of their years in practice.

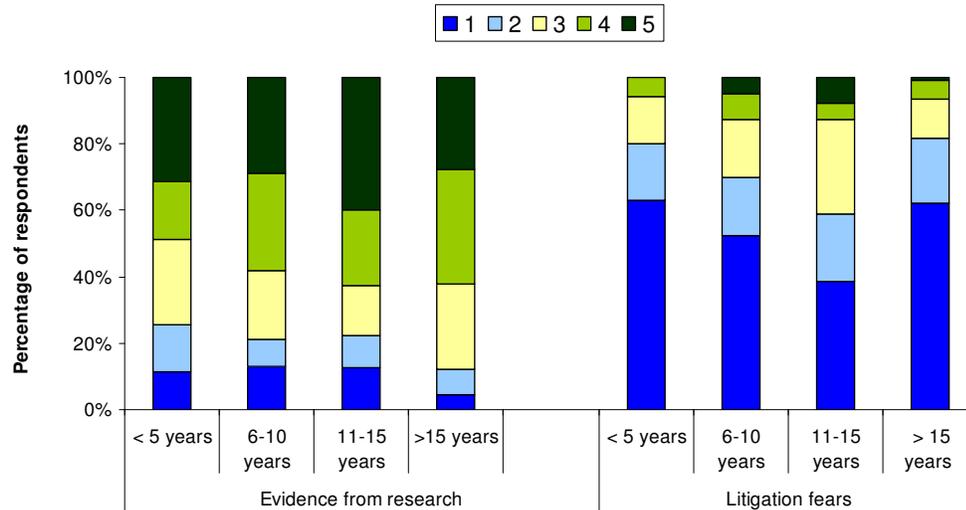


Figure 4.33. Influence of evidence from research and litigation fears and years in practice on decision not to suture.

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

#### 4.4.5 Peer pressure and continuity of carer

Table 4.31 demonstrates that the majority of midwives (81%) indicated that the factor of peer pressure had little influence on their decision not to suture. Just over half of the midwives indicated that continuity of carer had little influence on their decision not to suture.

Figure 4.34 demonstrates that there was no difference between main work types on the influence of peer pressure ( $p=0.1$ ). There were slight variations when peer pressure was considered with years in practice with 90% of midwives in the 6-10 year practice category indicating that peer pressure had little influence. However over 70% of the midwives in the other three years of practice categories also indicated that peer pressure had little influence on their decision to suture. The difference was not statistically significant ( $p=0.4$ ).

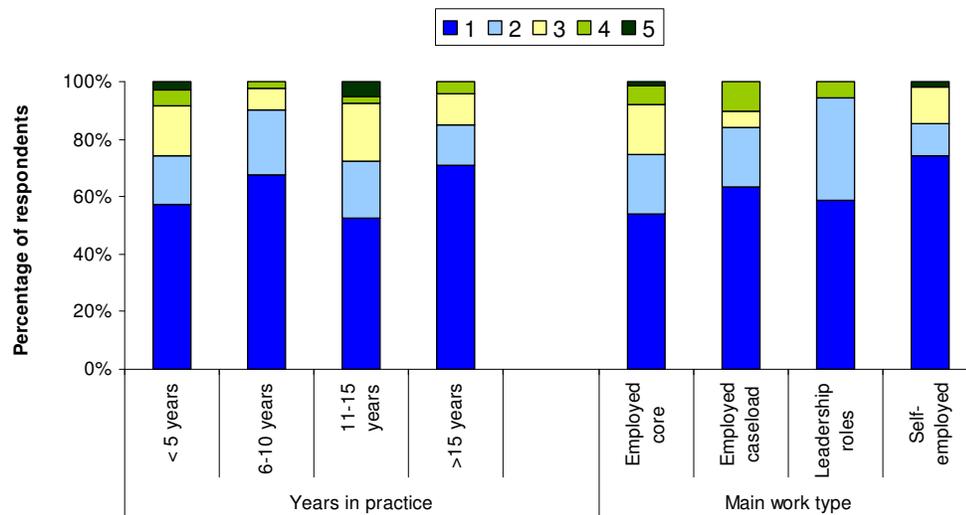
Figure 4.35 demonstrates that when continuity of carer was considered for each main work type, there appeared to be no difference between groups ( $p=0.9$ ). There was no significance when continuity of carer was considered for years in practice ( $p=0.4$ ).

Table 4.31

*Degree of influence of factors on decision not to suture: peer pressure and continuity of carer*

Degree of influence on Likert scale*	Factors	
	Peer pressure	Continuity of carer
	n=209 (%)	n= 206 (%)
1	134 (64.1)	97 (47.1)
2	36 (17.2)	21 (10.2)
3	28 (13.4)	30 (14.6)
4	8 (3.8)	25 (12.1)
5	3 (1.4)	33 (16.0)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)



*Figure 4.34. Influence of peer pressure and years in practice and main work type on decision not to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

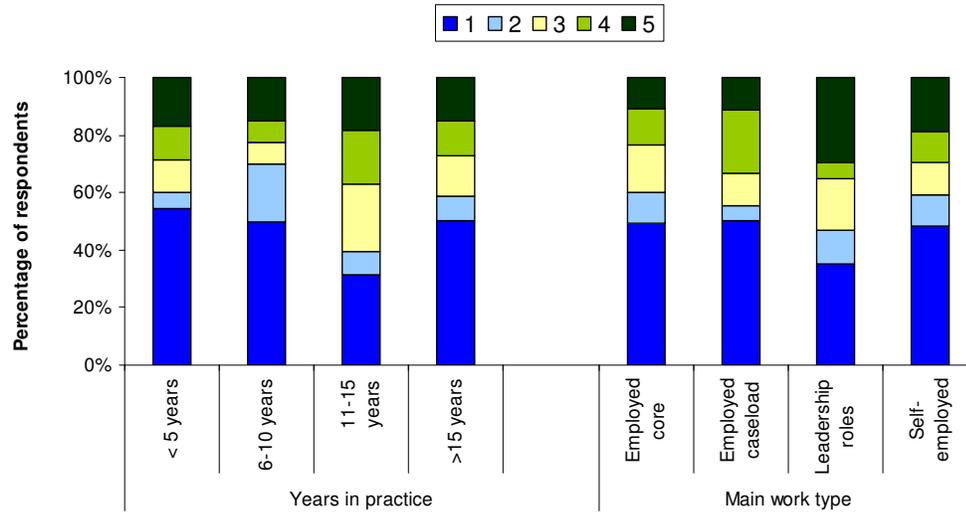


Figure 4.35. Influence of continuity of carer and years in practice and main work type on decision not to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

#### 4.4.6 Skin-skin contact and time restraints

Table 4.32 demonstrates that midwives indicated that skin to skin contact (64%) and time restraints (85%) had little influence on their decision not to suture the perineal tear.

Table 4.32

*Degree of influence of factors on decision not to suture: skin to skin contact and time restraints*

Degree of influence on Likert scale*	Factors	
	Skin to skin contact n=206 (%)	Time restraints n= 209 (%)
1	109 (52.9)	152 (72.7)
2	23 (11.2)	25 (12.0)
3	28 (13.6)	15 (7.2)
4	15 (7.3)	10 (4.8)
5	31 (15.0)	7 (3.3)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Over 75% of midwives indicated that regardless of the number of years in practice time restraints had no or little influence on their decision not to suture ( $p=0.3$ ). More self-employed midwives (92%) indicated that time restraints had little influence on their decision not to suture than other main work types but this was not statistically significant ( $p=0.06$ ) (Figure 4.36).

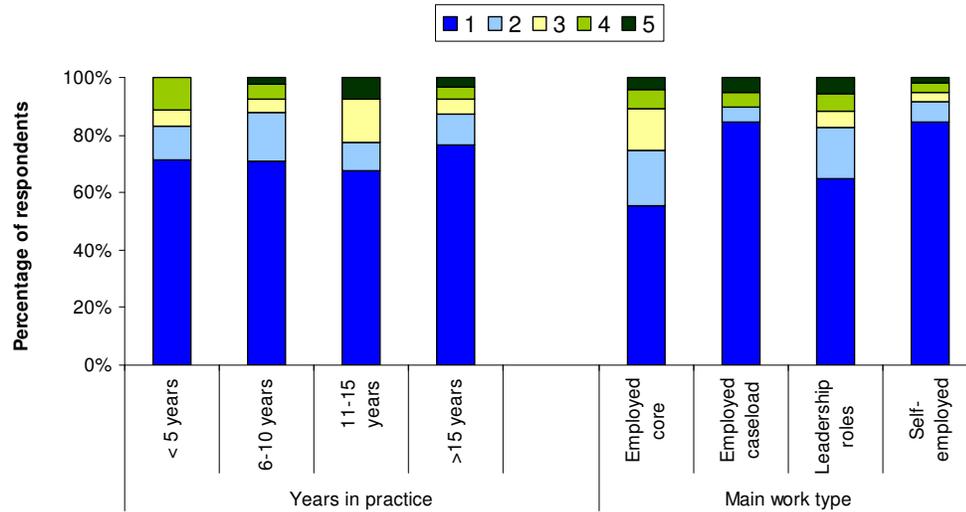


Figure 4.36. Influence of time restraints and years in practice and main work type on decision not to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Figures 4.37-39 demonstrate the range as an overview of all 15 factors and the degree of influences that midwives attributed to their decision not to suture the perineal tear. The majority of midwives indicated that each of the following six factors had a considerable influence on their decision: confidence in identification (78%), own practice experience (77%), woman's choice (61%), evidence from research (60%), woman's general health and wellbeing (60%) and previous perineal outcome (55%). The majority of midwives indicated that each of the following three factors had little influence in their decision not to suture: time restraints (85%), peer pressure (81%) and place of birth (80%).

In summary, Figure 4.40 presents an overall comparison of all 15 factor categories and the degree of considerable influence on the decision to suture or not to suture

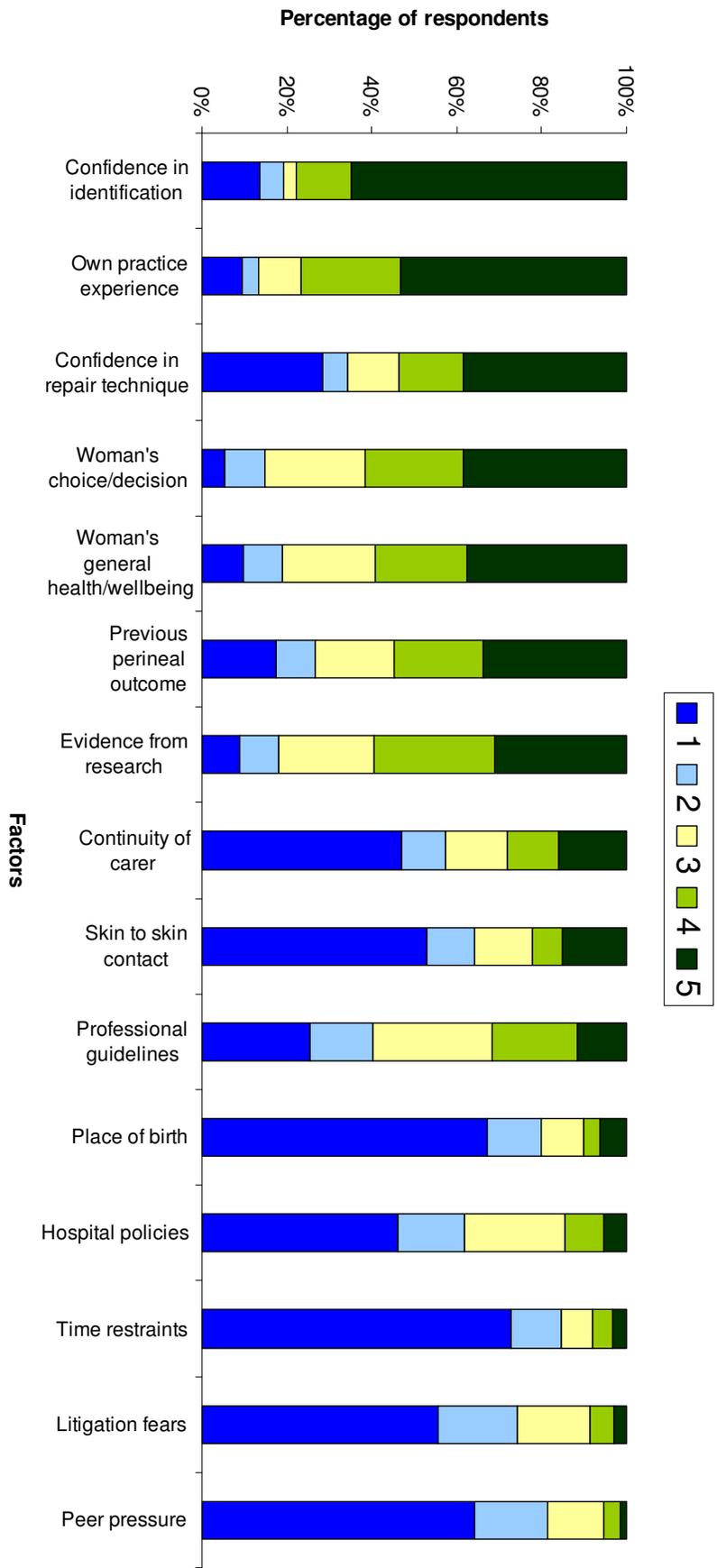
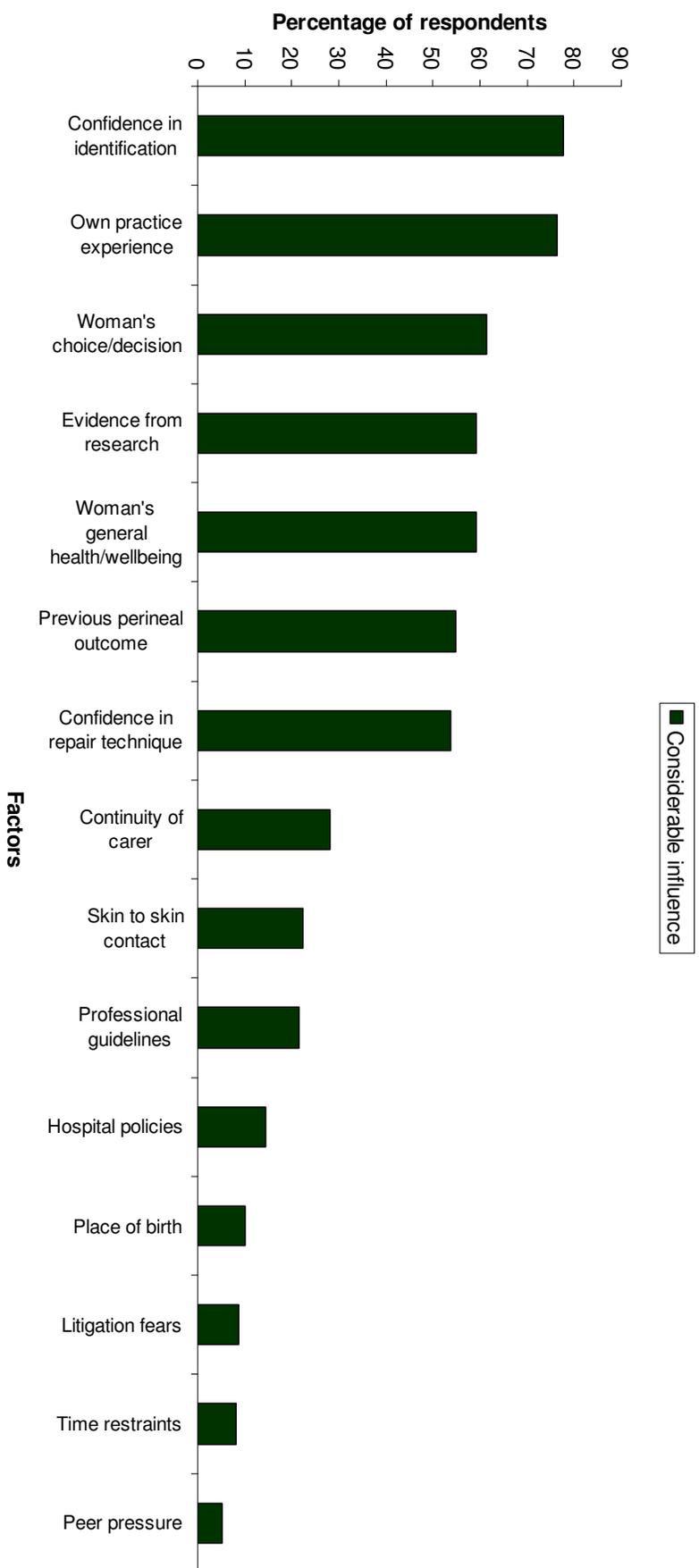


Figure 4.37. Factor categories and degree of influence on decision not to suture (placed in order of strongest influence)

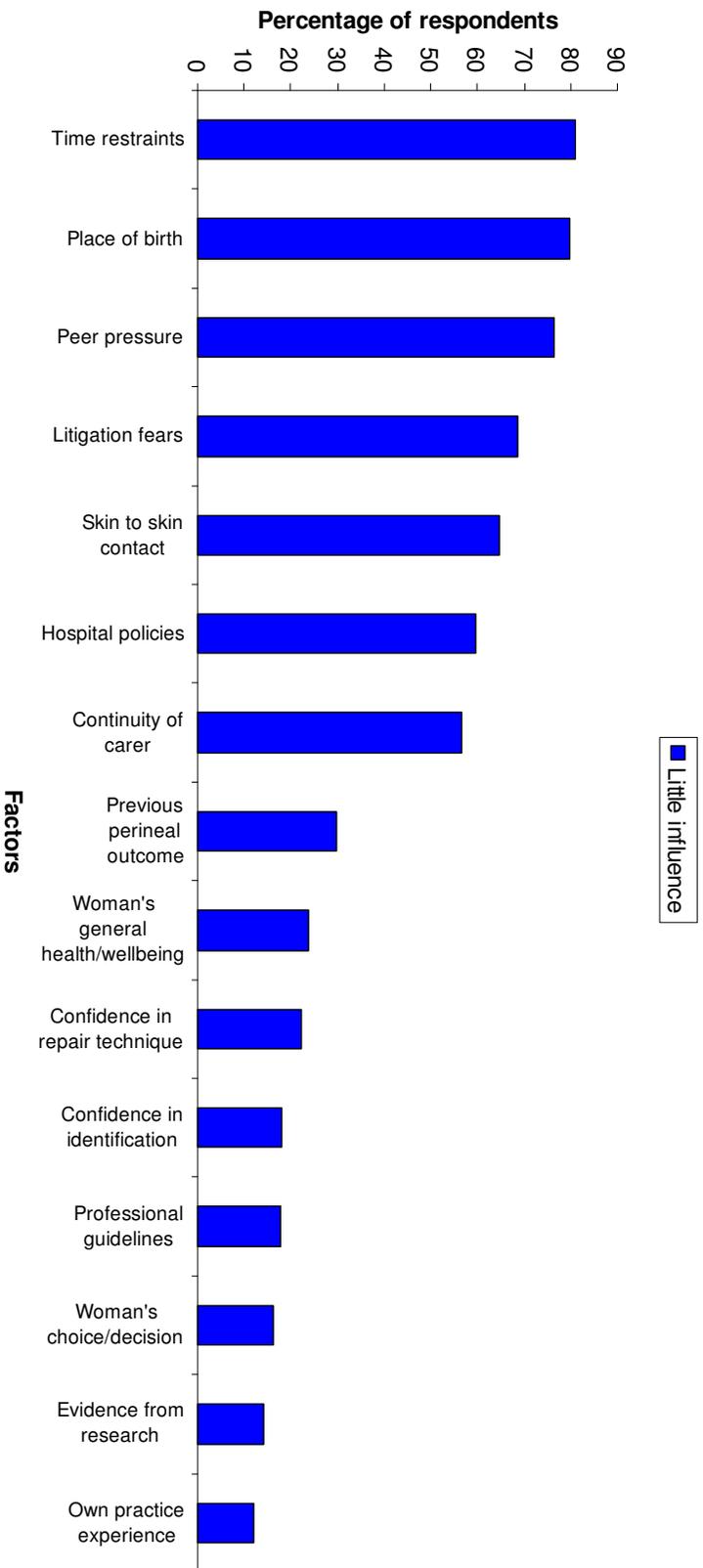
Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)



*Figure 4.38. Factor categories and degree of considerable influence on decision not to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

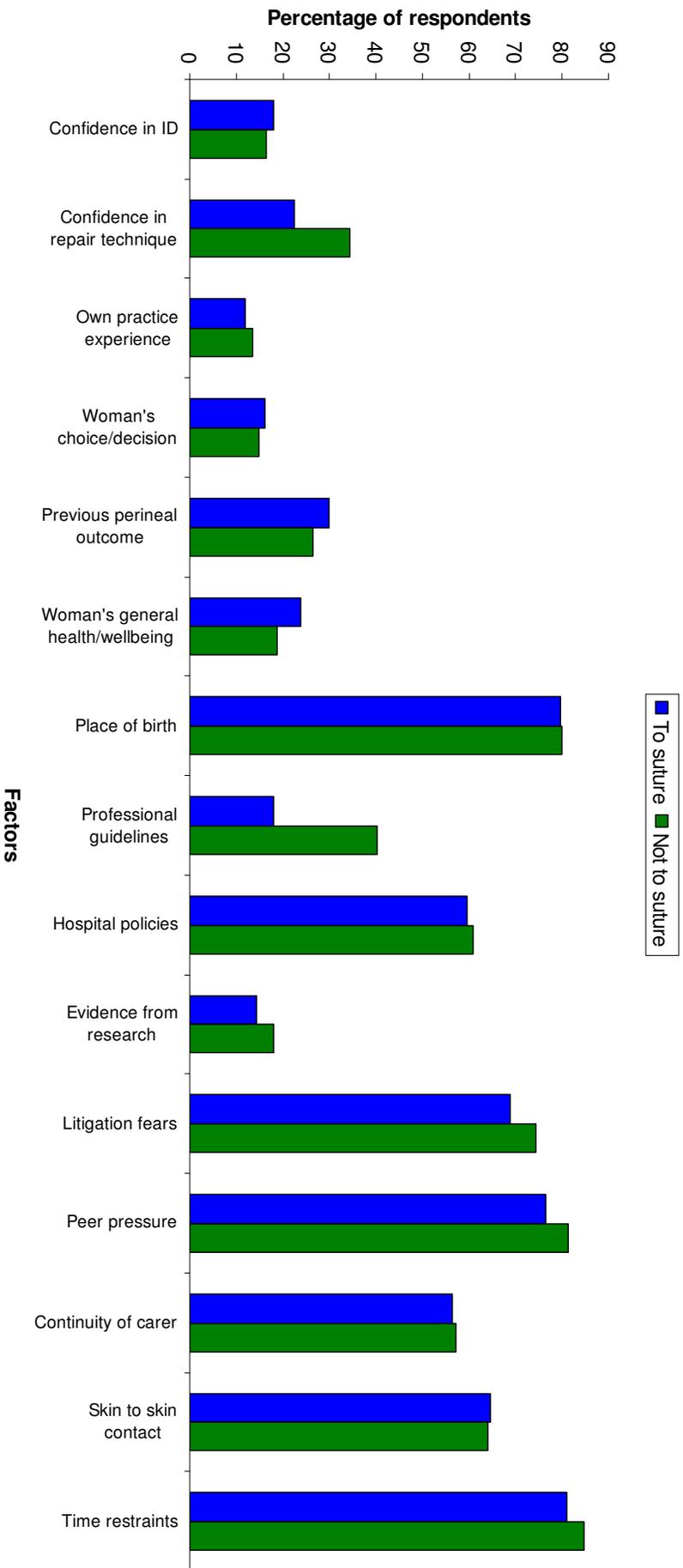
Grouped for analysis: Likert scale 4 & 5 = Considerable influence.



*Figure 4.39. Factor categories and degree of no or little influence on decision not to suture*

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

Grouped for analysis: Likert scale 1 & 2 = Little influence.



*Figure 4.40. Comparison of factor categories and degree of considerable influence on decision to suture and decision not to suture*

Note: \* Grouped for analysis: Likert scale 4 & 5 = Considerable influence.

Presented in sequential order as per questionnaire.

## 4.5 Influence of clinical characteristics on decision-making

This section presents the results of the degree of influence of six clinical characteristics on the participant's decision to either suture or not to suture the identified perineal tear. The denominator varies throughout the presentation of the results as not all midwives answered all of the questions.

### 4.5.1 Decision to suture

Clinical characteristics were highly influential for participants on their decision to suture the identified perineal tear (Table 4.33). The majority of midwives indicated three clinical characteristics had a considerable influence: depth of tear (92%), amount of bleeding (91%) and alignment/apposition (90%) (Figure 4.41). Similar findings occurred with two clinical characteristics; length and jaggedness of the tear. Although 68% of midwives indicated that the jaggedness of the identified perineal tear had a considerable influence and 72% of midwives indicated that length of the tear had a considerable influence on their decision, they were the least influencing of the clinical characteristics on the midwives decision to suture.

Table 4.33

*Degree of influence of clinical characteristics on decision to suture*

Degree of influence on Likert scale*	Clinical Characteristics					
	Depth of tear n=211 (%)	Amount of bleeding n=210 (%)	Length of tear n=211 (%)	Alignment/ apposition n=210 (%)	Branching /complex tear n=210 (%)	Jaggedness of tear n=210 (%)
1	2 (0.9)	3 (1.4)	9 (4.3)	3 (1.4)	9 (4.3)	13 (6.2)
2	2 (0.9)	2 (1.0)	9 (4.3)	0 (0.0)	5 (2.4)	14 (6.7)
3	12 (5.7)	13 (6.2)	41 (19.4)	17 (8.1)	20 (9.5)	40 (19.0)
4	33 (15.6)	31 (14.7)	53 (25.1)	56 (26.7)	34 (16.2)	41 (19.5)
5	162 (76.8)	161 (76.7)	99 (46.9)	134 (63.8)	142 (67.6)	102 (48.6)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

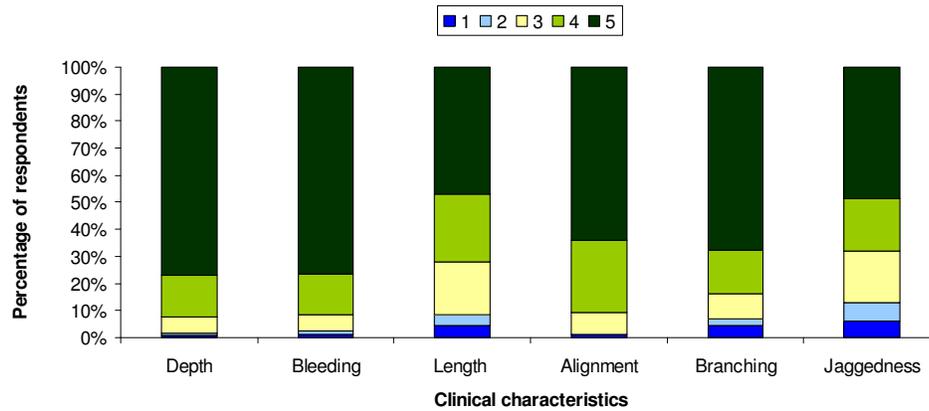


Figure 4.41. Degree of influence on factors on decision to suture: Clinical characteristics

#### 4.5.2 Decision not to suture

Table 4.34 demonstrates that clinical characteristics were highly influential for participants in the decision not to suture. The three clinical characteristics with the largest percentage of midwives indicating a considerable influence were: depth of tear (95%), amount of bleeding (93%) and alignment/apposition (90%) (Figure 4.42). Although 68% of midwives indicated that the jaggedness of the identified perineal tear had a considerable influence on their decision not to suture it was the least influential clinical characteristic.

Table 4.34

*Degree of influence of clinical characteristics on decision not to suture*

Degree of influence on Likert scale*	Clinical Characteristics					
	Depth of tear n=208 (%)	Amount of bleeding n=208 (%)	Length of tear n=208 (%)	Alignment/ apposition n=208 (%)	Branching /complex tear n=206 (%)	Jaggedness of tear n=206 (%)
1	3 (1.4)	6 (2.9)	9 (4.3)	7 (3.4)	26 (12.5)	27 (13.1)
2	4 (1.9)	1 (0.5)	6 (2.9)	3 (1.4)	14 (6.7)	17 (8.3)
3	4 (1.9)	8 (3.8)	19 (9.1)	12 (5.8)	14 (6.7)	21 (10.2)
4	29 (13.9)	27 (13.0)	43 (20.7)	31 (14.9)	23 (11.2)	27 (13.1)
5	168 (80.8)	166 (79.8)	131 (63.0)	155 (74.5)	129 (62.6)	114 (55.3)

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

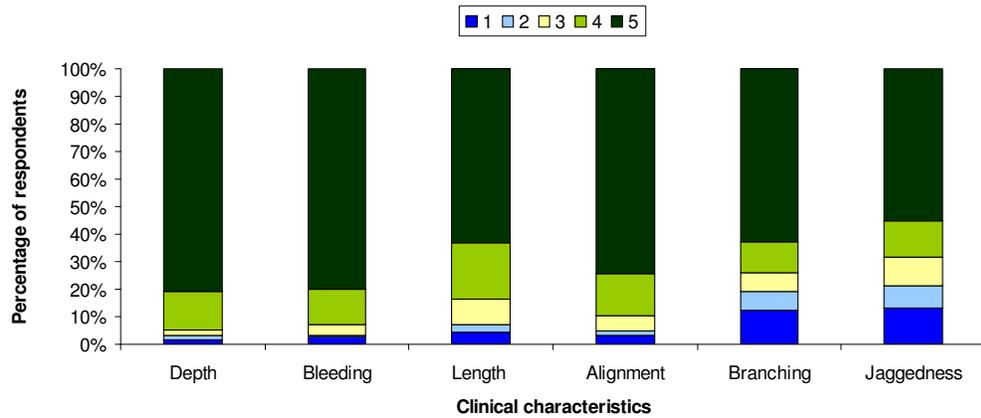


Figure 4.42. Degree of influence on factors on decision not to suture: Clinical characteristics

Figure 4.43 demonstrates the range as an overview of all six clinical characteristics and the degree of influence that midwives attributed to their decision to either suture or not to suture the perineal tear. Participants were strongly influenced in their decision to suture or not to suture by similar clinical characteristics. In both situations depth of tear, amount of bleeding and alignment/apposition were identified as being considerably influential.

However there were slight variations with the length and branching/complexity of the tear on the midwives decision to either suture or not suture the perineal tears identified on the two different women. The majority of midwives (84%) reported that the length of the tear was a considerable influence on their decision not to suture the perineal tear compared with 72% of midwives who indicated that the length of tear was a considerable influence on their decision to suture. The clinical characteristics of branching or complexity of the tear was a considerable influence overall however 84% of midwives indicated that it was a considerable influence on their decision to suture compared with 74% of midwives indicating that it was a considerable influence on their decision not to suture. The clinical characteristic of the jaggedness of tear was reported by midwives as being the least influential factor to either suture or not to suture.

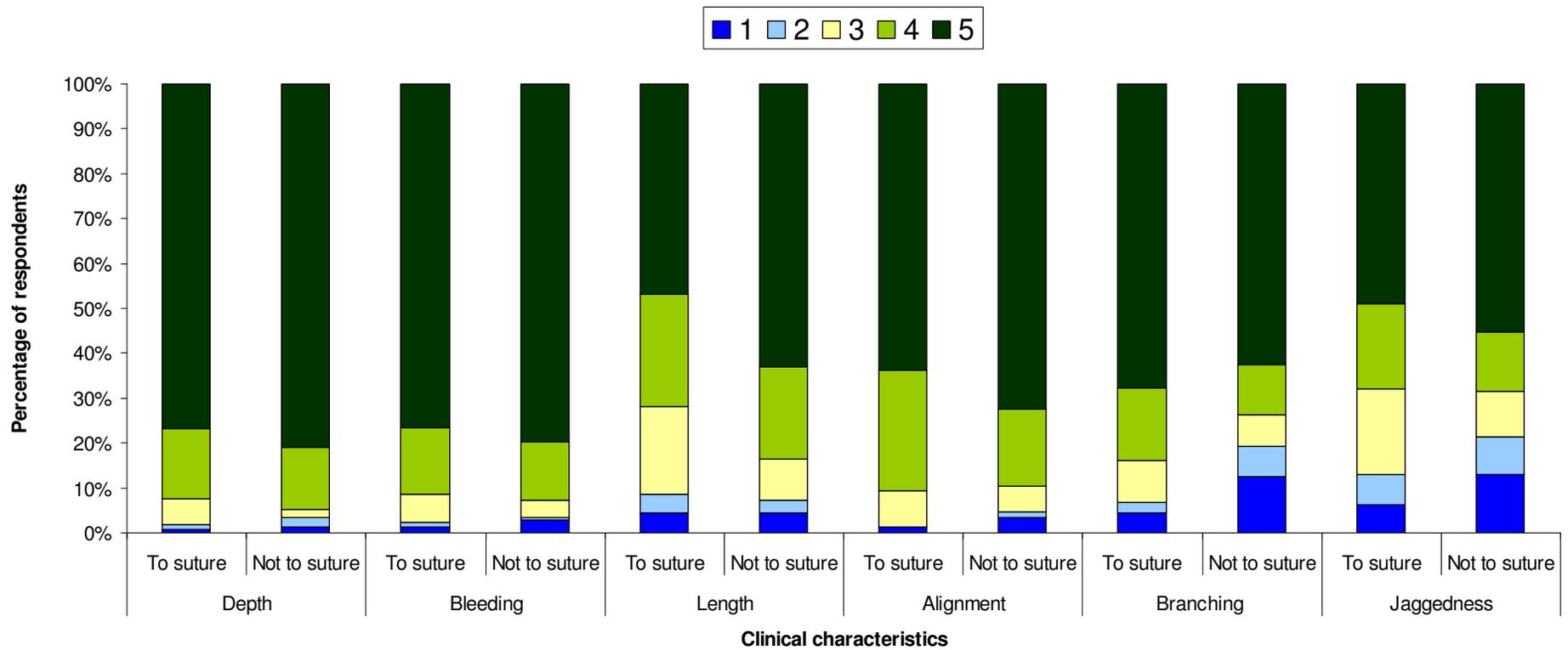


Figure 4.43. Degree of influence of clinical characteristics on decision to suture and not to suture

Note: \*Likert scale ranked from 1 (no influence) to 5 (strong influence)

## 4.6 Participants' Knowledge

This section presents the results of how midwives rated their own knowledge on four topics relating to perineal care: anatomy of the pelvic floor, physiology of wound healing, research on perineal care following birth and research on perineal care.

Table 4.35 demonstrates that overall the midwives reported that they had considerable knowledge on the four topics. However variations did occur by midwives in their self-reported knowledge on the topics which ranged from 63% of midwives reporting that they had considerable knowledge of physiology of wound healing compared to 49% reporting that they had considerable knowledge research on perineal repair.

Table 4.35

*Participants' levels of knowledge on perineal topics*

Degree of knowledge on Likert scale*	Knowledge			
	Anatomy of pelvic floor n=211 (%)	Physiology of wound healing n=212 (%)	Research on perineal care following birth n=212 (%)	Research on perineal repair n=210 (%)
1	2 (0.9)	0 (0.0)	6 (2.8)	8 (3.8)
2	10 (4.7)	9 (4.2)	25 (11.8)	28 (13.3)
3	78 (37.0)	69 (32.5)	70 (33.0)	71 (33.8)
4	96 (45.5)	96 (45.3)	84 (39.6)	82 (39.0)
5	25 (11.8)	38 (17.9)	27 (12.7)	21 (10.0)

Note: \*Likert scale ranked from 1 (minimal) to 5 (excellent)

Variations occurred when self-reported knowledge on the four topics was considered for years in practice with reported knowledge of anatomy of the pelvic floor ( $p=0.2$ ) and physiology of wound healing tending to increase with years in practice ( $p=0.2$ ) but these were not statistically significant (Figure 4.44).

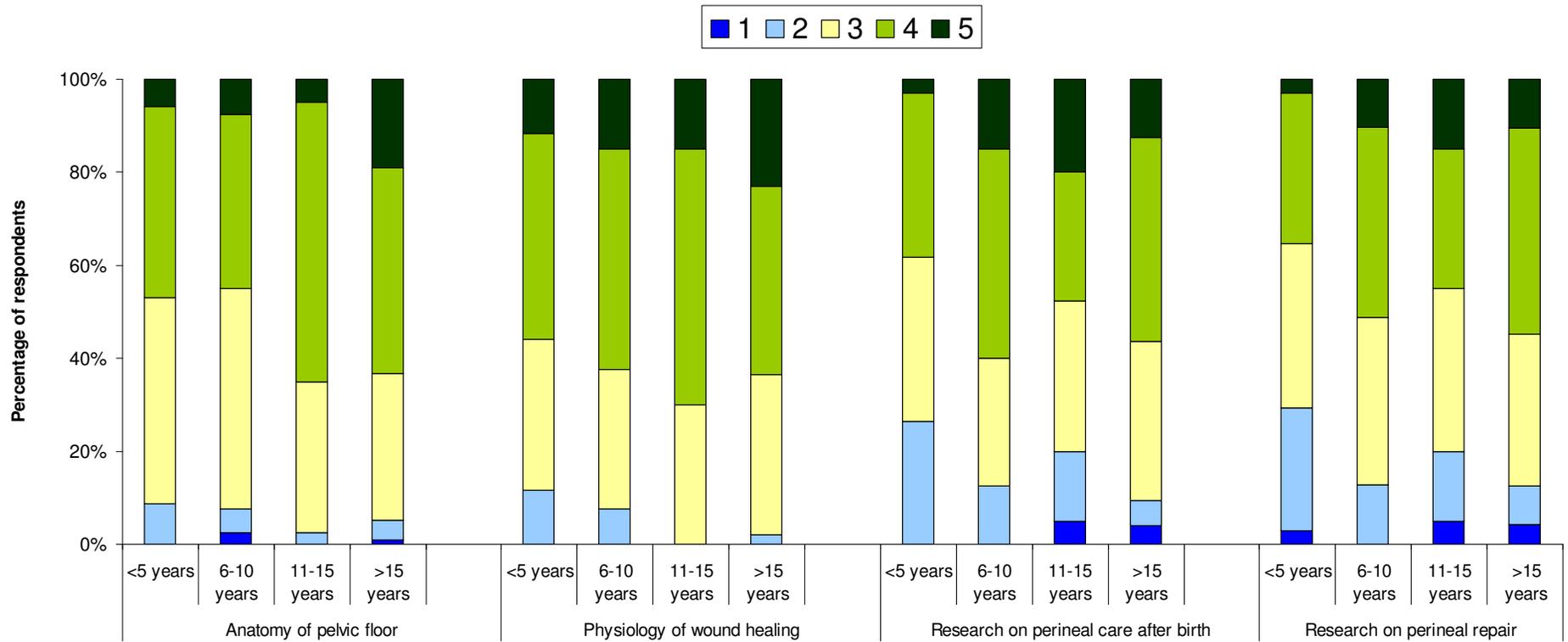


Figure 4.44. Participants' reported levels of knowledge on perineal topics and years in practice

Note: \*Likert scale ranked from 1 (minimal) to 5 (excellent)

## 4.7 Participants' Confidence

This section presents the results of how midwives rated their own confidence in undertaking repair of four types of perineal tears; first and second degree; branching or complex and labial tears.

Table 4.36 demonstrates that the majority of the midwives (88%) reported that they had considerable confidence in undertaking the repair of a first degree tear. A high percentage of midwives (74%) rated that they had considerable confidence in the repair of a second degree tear. Midwives scores were more evenly distributed for levels of confidence to repair labial tears. Midwives reported that they had the least confidence in the repair of branching tears with 41% indicating that they had limited confidence with repair of this type of tear (Figure 4.45).

Table 4.36

*Participants' reported levels of confidence in undertaking repair of perineal tears*

Degree of confidence on Likert scale*	Confidence			
	First degree tear n=210 (%)	Second degree tear n=213 (%)	Branching or complex tears n=213 (%)	Labial tear n=211 (%)
1	4 (1.9)	10 (4.7)	50 (23.5)	28 (13.3.)
2	5 (2.4)	12 (5.6)	38 (17.8)	24 (11.4)
3	17 (8.1)	34 (16.0)	62 (29.1)	49 (23.2)
4	42 (20.0)	70 (32.9)	48 (22.5)	58 (27.5)
5	142 (67.6)	87 (40.8)	15 (7.0)	52 (24.6)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

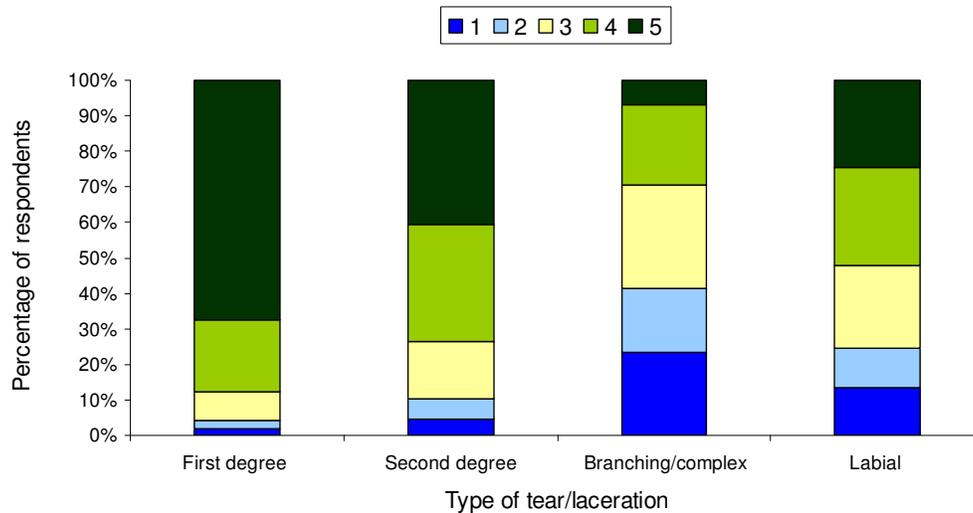


Figure 4.45. Participants' reported levels of confidence in undertaking repair of perineal tears

Note: \*Likert scale ranked from 1 (minimal) to 5 (excellent)

When confidence in undertaking repair of differing degrees of perineal tears, was considered for years in practice, there was a significant impact of years in practice on the midwives reported confidence in the repair of a first degree tear ( $p=0.01$ ), second degree tears ( $p=0.04$ ), branching tears ( $p=0.03$ ) and labial tears ( $p=0.05$ ) (Tables 4.37-4.40).

Table 4.37

Participants' reported levels of confidence in undertaking repair of first degree perineal tears and years in practice

Degree of confidence on Likert scale*	Years in practice			
	< 5 years	6-10 years	11-15 years	>15 years
	n (%)	n (%)	n (%)	n (%)
1	0 (0.0)	0 (0.0)	1 (2.5)	2 (2.0)
2	3 (8.5)	0 (0.0)	1 (2.5)	1 (1.0)
3	1 (2.9)	6 (15.3)	2 (5.1)	8 (8.3)
4	14 (41.1)	6 (15.3)	7 (17.9)	14 (14.5)
5	16 (47.0)	27 (69.2)	28 (71.7)	71 (73.9)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

\*\*Chi-squared test:  $p=0.01$

Table 4.38

*Participants' reported levels of confidence in undertaking repair of second degree perineal tears and years in practice*

Degree of confidence on Likert scale*	Years in practice			
	< 5 years	6-10 years	11-15 years	>15 years
	n (%)	n (%)	n (%)	n (%)
1	1 (2.9)	0 (0.0)	2 (5.1)	6 (6.1)
2	4 (11.7)	5 (12.5)	1 (2.5)	2 (2.0)
3	10 (29.4)	7 (17.5)	6 (15.3)	10 (10.2)
4	11 (32.3)	14 (35.0)	13 (33.3)	32 (32.6)
5	8 (23.5)	14 (35.0)	17 (43.5)	48 (48.9)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

\*\*Chi-squared test: p=0.04

Table 4.39

*Participants' reported levels of confidence in undertaking repair of branching/complex tears and years in practice*

Degree of confidence on Likert scale*	Years in practice			
	< 5 years	6-10 years	11-15 years	>15 years
	n (%)	n (%)	n (%)	n (%)
1	12 (35.2)	8 (20.0)	11 (27.5)	18 (18.5)
2	8 (23.5)	14 (35.0)	3 (7.5)	13 (13.4)
3	8 (23.5)	8 (20.0)	14 (35.0)	31 (31.9)
4	6 (17.6)	9 (22.5)	8 (20.0)	25 (25.7)
5	0 (0.0)	1 (2.5)	4 (10.0)	10 (10.3)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

\*\*Chi-squared test: p=0.03

Table 4.40

*Participants' reported levels of confidence in undertaking repair of labial tears and years in practice*

Degree of confidence on Likert scale*	Years in practice			
	< 5 years	6-10 years	11-15 years	>15 years
	n (%)	n (%)	n (%)	n (%)
1	4 (11.7)	3 (7.6)	8 (20.0)	12 (12.5)
2	4 (11.7)	11 (28.2)	2 (5.0)	7 (7.2)
3	11 (32.3)	7 (17.9)	10 (25.0)	20 (20.8)
4	11 (32.3)	9 (23.0)	9 (22.5)	29 (30.2)
5	4 (11.7)	9 (23.0)	11 (27.5)	28 (29.1)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

\*\*Chi-squared test:  $p=0.05$

When confidence in undertaking repair of differing degrees of perineal tears, was considered for main work types, there was a significant impact of the main work type on the midwives reported confidence in the repair of a second degree tears ( $p=0.03$ ) and branching tears ( $p=0.002$ ) (Tables 4.41-4.42). There were no statistically significant differences that occurred with impact of main work types and confidence in repair of first degree tear ( $p=0.6$ ) and labial tears ( $p=0.3$ ).

Table 4.41

*Participants' reported levels of confidence in undertaking repair of second degree perineal tears and main work type*

Degree of influence on Likert scale*	Main work type			
	Employed DHB core	Employed DHB case load	Leadership roles	Self-employed case load
	n (%)	n (%)	n (%)	n (%)
1	4 (5.1)	0 (0.0)	0 (0.0)	0 (0.0)
2	4 (5.1)	0 (0.0)	0 (0.0)	1 (1.0)
3	8 (10.3)	2 (10.5)	2 (11.7)	5 (5.3)
4	16 (20.7)	3 (15.7)	4 (23.5)	18 (19.1)
5	45 (58.4)	14 (73.6)	11 (64.7)	70 (74.4)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

\*\*Chi-squared test: p=0.03

Table 4.42

*Participants' reported levels of confidence in undertaking repair of branching/complex perineal tears and main work type*

Degree of influence on Likert scale*	Main work type			
	Employed DHB core	Employed DHB case load	Leadership roles	Self-employed case load
	n (%)	n (%)	n (%)	n (%)
1	32 (41.0)	3 (15.7)	0 (0.0)	14 (14.5)
2	13 (16.6)	2 (10.5)	5 (29.4)	18 (18.7)
3	23 (29.4)	5 (26.3)	5 (29.4)	27 (28.1)
4	10 (12.8)	6 (31.5)	5 (29.4)	27 (28.1)
5	0 (0.0)	3 (15.7)	2 (11.7)	10 (10.4)

Note: \*Likert scale ranked from 1 (not confident) to 5 (extremely confident)

\*\*Chi-squared test: p=0.002

## 4.8 Tools to aid decision-making

This section presents the results on tools that midwives may have used to aid in their decision making to either suture or not suture perineal tears. Over 90% of midwives reported that they had never used any of the tools (Table 4.43). Photographs were the tool most commonly used (9% of participants). Free text comments indicated that those midwives who had used the tools had done so predominately whilst practising in the United Kingdom.

Table 4.43

*Frequency of tools used by participants*

	<b>PeriRule TM</b> n=207 (%)	<b>Photographs</b> n=208 (%)	<b>REEDA scale</b> n= 206 (%)
Yes	6 (2.8)	19 (9.1)	3 (1.4)
No	201 (97.1)	189 (90.8)	203 (98.5)

## 4.9 Free text comments

The questionnaire invited midwives to comment in free text on any other factors or influences they believed had affected their decision in each of the scenarios to suture or not to suture. Almost half of the participants (45%) chose to add free text comments which amounted to 167 comments in total. Comments were coded and entered into an Excel spreadsheet, and were grouped into five categories. Table 4.44 demonstrates the themes that were reported by the midwives in the study.

Table 4.44

*Themes from free text*

Key themes	
To suture	<ul style="list-style-type: none"> <li>• Woman's health and diet; particularly heavy smoker, poor nutrition</li> <li>• Assessment of woman's weight; raising concerns about obesity and underweight women</li> </ul>
Not to suture	<ul style="list-style-type: none"> <li>• Previous practice experience particularly in the postnatal period and observing healing</li> </ul>
Clinical characteristics	<ul style="list-style-type: none"> <li>• Only suture a first degree tear if bleeding</li> <li>• Collegial support vital to enable consultation with other midwifery colleagues especially when unsure if to suture or not to suture</li> <li>• Any concerns re extended tear midwives will refer and consult with obstetric colleagues</li> </ul>
Knowledge	<ul style="list-style-type: none"> <li>• More educational opportunities required; not only in techniques but also pre/post birth care of the perineum</li> <li>• Knowledge was predominately from experience and supporting and observing other colleagues</li> <li>• More New Zealand research on perineal care overall for women required</li> </ul>
Confidence	<ul style="list-style-type: none"> <li>• Midwives employed in secondary/tertiary units: fewer opportunities compared to caseload midwives in suturing as obstetricians suture.</li> <li>• Midwives employed in primary units: fewer opportunities as caseload midwives assess and if required suture the tear</li> <li>• Midwives commented that as their own confidence increased they will suture more tears but equally feel decisions made of tears not sutured was appropriate; they felt confident not to suture</li> </ul>

#### **4.10 Summary of findings**

In summary 54% of 400 surveys were returned. The participants matched MOH data in terms of spread of geographical location and ethnicity. The majority (96%) of participants were practising midwives with 75% who practised in urban locations. There were equal numbers of self employed and employed midwives and 45% of participants had been in practice for >15 years.

The results highlight that the participants were influenced by numerous factors in their decision to suture or not to suture spontaneous perineal tears following birth. There were some similar factors that influenced midwives in either decision to suturing or not suturing the perineal tear.

Factors that were commonly rated as having a considerable influence in the decision to suture were: the midwives own practice experience, confidence in identification of the tear and confidence in repair technique. Factors that were most commonly related as having little influence were: time restraints, place of birth and peer pressure.

Factors that were commonly rated as having a considerable influence in the decision not to suture were: confidence in identification of the tear, the midwives own practice experience, and the woman's choice. Factors that were most commonly related as having no influence were: time restraints, peer pressure and place of birth.

Clinical characteristics were highly influential on the decision to suture or not to suture the perineal tear. The three factors that had a considerable influence on either the decision to suture or not suture were: depth of the tear, amount of bleeding and the alignment/apposition of the tear. The clinical characteristic of the jaggedness of tear was reported by midwives as being the least influential factor to either suture or not to suture.

Main work types, years in practice and practice location had an impact on some but not all factors.

- Main work types had an impact on the influence that hospital policies had on the decision to suture ( $p=0.02$ ) and not to suture the perineal tear ( $p<0.001$ ).
- Years in practice had an impact on the influence that time restraints had on the decision to suture ( $p=0.05$ ).
- Years in practice had an impact on the influence that confidence in the repair technique had on the midwives decision to suture ( $p=0.04$ ) and not to suture ( $p=0.03$ ) the perineal tear.
- Years in practice impacted on the influence that the practice experience had on the midwives decision not to suture the perineal tear ( $p=0.04$ ).
- Main work types impacted on the influence that the woman's previous perineal outcome had on the midwives decision not to suture the perineal tear ( $p=0.05$ ).
- There was an impact of years in practice and the midwives reported confidence levels in the repair of a first degree ( $p=0.01$ ), second degree tear ( $p=0.04$ ), branching/complex ( $p=0.03$ ) and labial ( $p=0.05$ ) tear.
- There was an impact of main work types and the midwives reported confidence levels in the repair of a second degree tear ( $p=0.03$ ) and a branching/complex ( $p=0.002$ ) tear.

The following chapter discusses the significance of the results of this study and the implications for midwifery practice.

## **Chapter Five: Discussion**

### **5.0 Introduction**

This chapter discusses the results and key findings from this research. The limitations of the research project are examined and the implications for midwifery practice and future research are considered. The aim of this study was to identify factors that may influence midwives in their decision-making to either suture or not to suture spontaneous perineal tears following birth. The study has clearly demonstrated that midwives are influenced by multiple factors and has highlighted that the decision-making process for midwives on this topic is both complex and variable.

While research exists around the benefits and risks associated with suturing or non-suturing of spontaneous tears, there is little research on the factors that influence midwives in making this decision. Mok and Stevens (2005) have suggested that there are numerous factors which have influence over midwifery decision-making; knowledge and experience, environments of practice, risk management, the profession, and evidence from research. This study attempts to quantify the extent to which such factors might influence decision-making around midwifery perineal care following spontaneous birth.

The study identified that midwives' practice experience, confidence in identifying the degree of the tear, confidence in repair technique, evidence from research, previous perineal outcome and woman's general health and wellbeing had the greatest influence on the decision to suture. Although there were similar findings in the decision not to suture there was one key difference; woman's choice was also influential on the decision not to suture. There were three factors which had little influence for midwives on either their decision to suture or not to suture; time restraints, place of birth and peer pressure.

This study has demonstrated that clinical characteristics were highly influential with regard to both decisions. Depth of the tear, amount of bleeding and the alignment/apposition of the tear were factors that had a considerable influence on either the decision to suture or not suture. These factors have been previously identified

in similar studies conducted in Australia (Cioffi et al., 2008) and the United Kingdom (Spendlove, 2005).

## **5.1 Midwifery Practice**

Midwifery as a profession in its own right enables New Zealand midwives to practice autonomously. Whilst participants in this study were influenced by multiple factors there were clearly some factors that had a stronger influence on their decisions. The decision as to whether to suture or not to suture spontaneous perineal tears is embedded within the midwifery Scope of Practice. This is guided by regulatory and professional frameworks. The next sections consider the influences of the various factors investigated.

### **5.1.1 Confidence and Practice Experience**

Confidence has been defined as self-assurance arising from an appreciation of one's abilities (Oxford Dictionary 2008). Only the individual midwife can gauge and identify her own levels of confidence and articulate the influence of that confidence on her own practice. Two key findings in this study were the degree to which midwives indicated that confidence and practice experience were both highly influential on the decision-making process to either suture or not to suture.

The study did not invite midwives to classify the tear and therefore it is not known whether first, second-degree or more complex tears were identified. However, over 70% of all participants indicated that their confidence in the initial identification of the degree of the perineal tear was a considerable influence on their decision to suture or not to suture. This emphasises the importance of the initial midwifery assessment of the perineal tear and supports the notion suggested by Spendlove (2005) that midwives utilise a two-stage approach to decision-making: assessment and a contemplation phase.

Midwives reported that confidence in their repair technique was important when they decided to suture. Critics of midwives who choose non-suturing over suturing have speculated that midwives who lack the confidence and experience in the repair technique choose the non-suturing option (Fleming et al., 2003). This conclusion does

not appear to be supported by the results of this study which indicated that confidence in the repair technique had been an influencing factor for three quarters of the participants who decided to suture and half of those who decided not to suture.

This study has shown that a midwife's practice experience is a significant influence on the decision to either suture or not to suture. However the results of this study have also shown that as midwives gain more practice experience they are less likely to suture the identified perineal tear ( $p=0.04$ ). This finding supports the notion that increased exposure to practice experience leads to increased confidence. Similar findings occurred in a study undertaken by Dahlen and Homer (2008) where midwives indicated that confidence in carrying out perineal repair was associated with more practice experience.

Reported levels of confidence by midwives in this study suggest that the type of perineal tear identified has an influence on the midwives' level of confidence in the repair technique. The majority of midwives indicated that they had considerable confidence in the repair of both a first and second degree tear. Only a quarter of midwives indicated that they felt confident in the repair of a branching/complex tear. Results suggest that midwives recognise the complexity of the tear and this in itself affects the decisions that they make.

Mead and Sullivan (2005) suggest that clinical experience and confidence can be defined as the level of expertise that comes from dealing with similar situations on a number of occasions. This implies that the more exposure a midwife has to a learning opportunity through the practice experience then the more confidence levels increase. The results of this study have identified that there was a significant impact of years in practice ( $p=0.04$ ) of the participants in regards to the degree of confidence in undertaking the repair of a second-degree tear. There was a high level of congruence between the findings of this study and those from a previous study (Dahlen & Homer, 2008) which suggested that the more midwives were exposed to and had the opportunities to experience perineal repair then confidence levels increased. However Spendlove's 2005 study found no correlation between the length of qualification of midwives and the level of skill in perineal repair. These studies suggest that midwives with little practice experience may have limited confidence in perineal repair and

emphasises the importance of midwives supporting midwifery colleagues in gaining this experience.

New Zealand midwives can choose to practice and work as employed DHB midwives, self-employed midwives, educators, lecturers, midwifery advisors or managers. It was unknown if the participants main work type would have any influence over decision-making regarding suturing versus non-suturing of perineal tears. The participants main work type did not appear to influence all factors however there were significant findings such as the midwives reported confidence levels in the repair of a second-degree and a complex tear, which suggests that work types may influence midwives' confidence and therefore influence the decision-making process. This requires further exploration to either support or refute this suggestion.

### **5.1.2 The importance of knowledge**

Knowledge has been described as being acquired from a multitude of sources and is a state of knowing, awareness, consciousness, or familiarity gained by experience or learning (Siddiqui, 2005). There is an assumption that the link between midwives' knowledge and practice is crucial to enable effective decision making. Hunter (2008) suggests that the midwife's own professional knowledge is important because it helps to shape the lived experience of being a midwife and caring for women during childbirth. This implies that midwives require a knowledge base on which to support decision-making and furthermore to have confidence in their decisions once they have been made. It appears that midwives in this current study accumulated greater knowledge as their years in practice increased. This was demonstrated with increased levels of knowledge reported on anatomy of the pelvic floor and wound healing. Similar findings have occurred in other studies (Cioffi et al., 2008; Spendlove, 2005), where midwives identified that it was essential to have a thorough understanding of anatomical structures.

Participants in this study were considerably influenced by evidence from research in their decision to either suture or not to suture. However, only half of the participants reported that they had *considerable knowledge* of research relating to perineal repair and perineal care after birth and yet midwives indicated that regardless of years in practice, evidence from research was important in their decision-making. This finding

is of particular interest when consideration is given to the current evidence available to midwives to support their decision-making. Whilst there are numerous studies available to midwives as described in chapter two, there are however conflicting views and interpretations of the research relating to the decisions of suturing or non-suturing of spontaneous perineal tears.

Evidence to inform practice is not static and it is a necessity that midwives as with other health professionals, are conscious of current evidence. However, Sackett et al (1996) state that evidence should be used to guide care and not to dictate it. Within the descriptions of a hierarchy of evidence, systematic reviews and randomised controlled trials are seen as the '*gold standard*' of evidence (Cluett, 2006a) but it could be argued that there may be specific topics that are not ideally suited for this particular approach. Certainly the literature reviewed in chapter two suggests that there were compliance issues for the randomised controlled trials explored (Langley et al., 2006). However neither study made any reference to how the midwives were informed of the study protocol. Poat, McElligott and Fleming (2003) suggest that midwives must welcome the opportunity to contribute to research and thereby provide more rigorous midwifery care. The studies by Fleming et al., (2003) and Langley et al., (2006) demonstrate that consultation with midwives for any research in general is vital to ensure that the outcomes of the study are achieved. Perhaps if this had occurred, both studies may have had more success in recruitment rates to randomised groups. It could also be suggested that the use of randomised controlled trials relating to the outcomes of suturing or non-suturing have limitations.

Siddiqui (2005) suggests that intuitive or tacit knowledge is important to inform decision making. Midwives also rely upon knowledge gained through established theories and problem-solving. Proctor and Renfrew (2000) suggest that the concept of knowledge-based practice be considered in preference to evidence-based practice, whereby midwives not only have an understanding and utilise evidence but equally incorporate their own professional knowledge gained from practice experience. It was not within the scope of this research project to explore the actual evidence that midwives may utilise in their practice however this study has demonstrated that evidence to inform practice was a considerable influence. Further research into an understanding of which evidence midwives utilise and apply to practice is required.

## 5.2 Clinical characteristics: The Assessment

Previous studies conducted regarding practices of suturing versus non-suturing of perineal tears have suggested that the management of perineal tears is influenced by the clinical characteristics of the tear (Fleming et al., 2003; Langley et al., 2006; Lundquist et al., 2000). Midwives in this study indicated that clinical characteristics were considerably influential in their decision to either suture or not to suture spontaneous perineal tears. Similar clinical characteristics influenced both decisions. Over 90% of participants were considerably influenced by two key clinical characteristics, bleeding and depth of tear, regardless of their decision to suture or not to suture. These results reflect the findings of a previous study (Cioffi et al., 2008) where midwives also identified two main clinical cues which were both significant factors in the decision-making process, bleeding and the extent of the perineal trauma.

This study did not invite midwives to describe the actual degree/amount of bleeding found during the assessment phase. However bleeding itself as a factor was an important influence on the decision-making process of the participants. Two studies related to suturing versus non-suturing excluded tears that were bleeding from the study criteria (Langley et al., 2006; Lundquist et al., 2000). By excluding perineal tears that were bleeding from their studies it limits the generalisability of these two research projects, as the clinical characteristic of bleeding would appear to strongly influence midwives in their decision-making process.

In order to gauge the degree of severity of perineal tears the assessment phase is an essential aspect of the decision-making process regarding suturing or non-suturing. In this study midwives were influenced by similar clinical characteristics during the assessment. In both situations depth and length of tear were identified as being considerably influential. Tohill and Metcalfe (2006) have suggested that the actual depth and length of the tear needs to be measured in order to support the decision making process of either suturing or non-suturing. In this current study, over 90% of participants, indicated that they had not used any tools to aid their decision-making and yet they still indicated that the depth and length was highly influential. The questionnaire invited participants to write free text comments and midwives used words to describe their clinical characteristic findings as; *shallow, edges in good*

*aposition, not too deep or jagged and proximity of apex to anal sphincter.* There were no midwives who described the degree of tear as a linear measurement as had been suggested by Tohill and Metcalfe. It is not possible to know if midwives in New Zealand would benefit from the use of any tools to aid their decision making but it is clear from this study that they are making decisions based on clinical findings despite not using the tools that are used by midwives in the United Kingdom. As this study has demonstrated, midwives were strongly influenced by their own confidence in identification and repair of the perineal tear. Thus while the introduction of such tools may be helpful, it could be suggested that it is the actual confidence and knowledge of the midwife that is the tool itself.

### **5.3 'Being' Professional**

#### **5.3.1 Professional guidelines and hospital policies**

The degree of influence that guidelines and policies have on decision-making has been previously explored. Cioffi et al., (2008) implied that they both may have an influence on midwives decisions regarding suturing or non-suturing. In this study professional guidelines were more influential in the decision not to suture than to suture.

Hospital policies had little influence on the midwives' decision to either suture or not to suture. Whilst midwives generally were not influenced by hospital policies the midwives chosen main work type did have a significant influence on the decision not to suture ( $p < 0.001$ ). The results suggest that employed core midwives were more influenced by hospital policies than self-employed midwives. The reason for this is unknown, however it may suggest that employed core midwives' practice is influenced by the structures of their organisation and therefore decision-making is also influenced. The unique role of midwives employed within maternity facilities has been explored by Guilliland and Pairman (2010) who also suggested that conflict can exist for these midwives within the institutions particularly when employed midwives and women enter a partnership under the confines of institutional expectations and protocols of the District Health Board. It appears that self-employed midwives may be less influenced by hospital policies and therefore decide to override these policies in favour of professional autonomy and decision-making around the decision not to suture the perineal tear.

This study did not invite midwives to state or describe the policies and guidelines which they use in their practice and therefore further investigation is required regarding the current policies and guidelines that New Zealand midwives may be using in their practice. However, perhaps all midwives, regardless of their main work setting, would be more likely to embrace policies and guidelines if they were involved in the development processes of hospital policies. Further exploration of the extent to which midwives are involved in the development of hospital policies is required to support or refute this concept.

### **5.3.2 Fears and Pressures: Litigation and peers**

Symon (2000) suggests that there has been a rise in the incidence of litigation in the United Kingdom and that practitioners have begun to practice defensively and this may inadvertently effect how a practitioner acts. The results of this study do not support this concept as the majority of midwives indicated that fear of litigation had very little influence on their decision to either suture or not to suture. Dahlen and Homer (2008) also found a similar finding where midwives indicated they were more concerned about ensuring that a good repair of the tear was achieved and that they were less likely to worry about legal implications.

However there was an association between years in practice and the degree to which the litigation fears influenced the participant's decision-making. Regardless of their decision to suture or not to suture, midwives at either end of the practice year categories (<5 or >15 years) were less influenced by fear of litigation. This may suggest that midwives commencing practice have been exposed to less practice experiences and therefore are less influenced by their own experiences. Conversely, as midwives are exposed to more practice experience gained through increased practice years their increased knowledge and experience give them the confidence to make the decision rather than let the fear of litigation override their decision making.

The participants' main work types influenced the degree that fears of litigation had on the midwives decision not to suture the identified perineal tear. There were more self-employed midwives who indicated that fear of litigation was less of an influence than it was for employed core midwives within the DHB. This was an unexpected finding and although there may be scepticism as to why this may have occurred it does support

similar notions explored in other studies (Anderson, 2006; Miller, 2008) which suggest that the model of care in which the midwife works influences the decision. It is possible that midwives practising within a continuity of carer model have confidence that non-sutured tears heal well and thus are not as influenced by litigation fears around non-suturing of the perineal tear.

It has been suggested that time restraints, peer pressure and workforce shortages may have the potential to indirectly influence decision-making regarding suturing or not suturing (Bosanquet, Doumouchsis, & Fynes, 2008; Dahlen & Homer, 2008; Odibo, 1997; Spendlove, 2005). However the findings of this study found that neither time restraints nor peer pressure had any significant influence on midwives and furthermore found that peer pressure was the least influential factor overall on the decision to either suture or not to suture. This suggests that New Zealand midwives are supported by colleagues and peers in their decision to either suture or not to suture and are not influenced in their decisions by time restraints. It is important to acknowledge that this study did not ask midwives if they sought peer advice in relation to their decision and this is an area for further research. Nevertheless, this finding is important as it suggests that the midwives viewed the decision as to whether or not to suture, as their own professional responsibility consistent with the concept that midwives in New Zealand are autonomous practitioners and practising within their Scope of Practice (MCNZ, 2005b).

#### **5.4 Women and Midwives: The Partnership**

The New Zealand model of maternity care enables women to choose to give birth at home, at primary maternity facilities or secondary/tertiary maternity hospitals (NZCOM 2009). New Zealand midwives provide care to women in these locations, which are in urban and rural locations. A surprising finding in this study was that the majority of midwives reported that the place of birth had little influence on the decision to suture or not to suture and suggests that the environment did not influence the midwives decision making process. This finding is in contrast to Miller's (2008) study that implied that women who birthed in a hospital setting were more likely to have a perineal tear sutured compared to those who birthed at home.

New Zealand's midwifery partnership model (Guilliland & Pairman, 1995) supports the notion that midwives work in partnership with women and is the underlying philosophy of New Zealand midwifery practice. Assumptions have been made in previous studies that the model of continuity of carer may have a strong influence on decision-making (Cioffi et al., 2008; Dahlen & Homer, 2008). These Australian studies implied that midwives believed that women-centered care was an important factor for midwives in their decisions regarding suturing or non-suturing. However, an unexpected finding in this study was that overall three-quarters of the participants reported that continuity of carer was not an influential factor on either decision to suture or not to suture. This is the first study to consider the concept of continuity of carer and its impact on perineal care following birth. It is difficult to confirm or refute the reasons behind this finding however it could be due to the way that the midwives interpreted this term and its application to perineal care following birth.

In New Zealand midwifery care is women-centered and is based on a model of partnership and negotiation between the midwife and woman regardless of the midwife's main work type; employed or self-employed. Continuity of carer rather than care refers to a midwife providing care to a woman who is the centre of the care throughout the whole pregnancy.

This study has demonstrated that there appears to be an influence of the midwife's main work type, with self-employed midwives, practicing within a continuity of carer model being more influenced by women's choice. This suggests that this model does enable midwives to engage in more meaningful discussions regarding perineal care throughout the pregnancy rather than around or just after the time of birth as would occur for their employed core colleagues. This once again suggests the possibility that participants may have interpreted the term "continuity of carer" and its application to care of the perineum in variable ways. The full impact that continuity of carer may have on the decision-making regarding suturing or non-suturing of perineal tears would benefit from further exploration.

Decision-making is a multi-dimensional activity which is influenced by several factors and the women's preference cannot be underestimated or dismissed. The inclusion of women in decision-making regarding suturing or non-suturing has been explored in

other studies and has shown to be a central aspect of decision-making for midwives considering suturing or non-suturing (Clement & Reed, 1999; Head, 1993). The process of informed decision-making occurs within the partnership model of care. It is expected that midwives make balanced decisions regarding suturing or non-suturing, based on their knowledge and women's choice. Salmon (1999) suggested that women's experiences of perineal repair may influence their decision as they believed that the suturing procedure was something to be endured. Participants in this study were considerably influenced by women's choice, particularly in relation to the decision of not to suture the perineal tear. This could imply that the midwives believed the option of non-suturing to be a more complex process for their decision-making and that it was more important that woman's choices were included in the decision-making process. Tupara (2008) suggests that time constraints and pressure on midwives may result in midwives having a lack of discussion with women about their choices in maternity care. Whilst the results of this study suggest that midwives were not influenced by time or peer pressure it is unknown if these factors may have had any influence on discussions with women regarding the final decision to suture or not to suture. Further exploration is required to explore these impacts for women and informed decision-making.

As described in chapter two, wound healing can occur by primary intention and secondary intention (Boyle, 2006b). The links between wound healing and women's health are important aspects for midwives to consider in their decision-making process as to whether to suture or not to suture. Midwives in this study reported that they possessed good knowledge on the physiology of wound healing.

An important finding was the considerable influence that the woman's general health and wellbeing had on the midwives decision. Studies have suggested that a woman's body mass index (BMI) may influence outcomes regarding perineal trauma following birth (Albers, Greulich, & Peralta, 2006; Boyle, 2006b). However this notion has not been explored in other studies relating to suturing or non-suturing. There were numerous comments in the free text which highlighted that midwives were indeed influenced by a woman's body mass index (BMI) but participants also indicated the importance of the woman's diet and general wellbeing in regards to the decisions they

made. This suggests that midwives utilised a holistic approach when making decisions regarding suturing or non-suturing of perineal tears.

### 5.5 A multitude of factors

The overall findings of this study have demonstrated that the participants were influenced by a multitude of factors in their decision to either suture or not to suture. There were similar trends seen that influenced either option and these are demonstrated in the Decision Stairway (Figure 5.1) which shows the six most influential factors that influenced either decision.

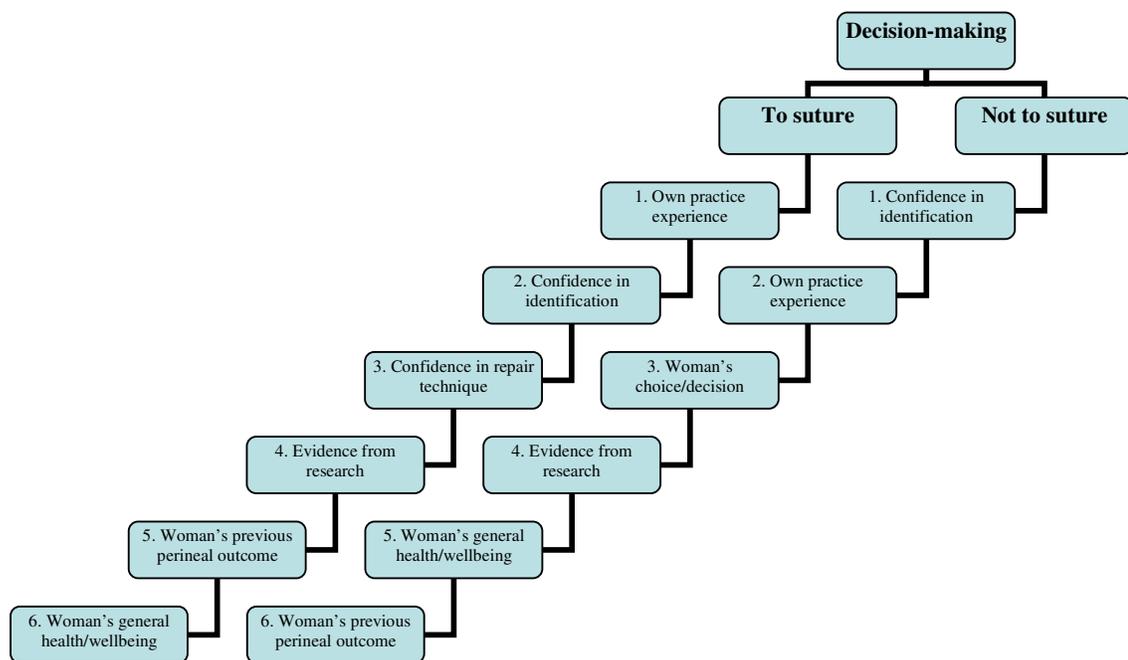


Figure 5.1. The six most influential factors that influenced the decision to suture or not to suture (1=most influential and 6=least influential).

### 5.6 Strengths and Limitations of the Study

By using a survey approach, I was able to access a significant number of practising midwives and the results represent the largest known cohort of midwives to be studied (n=216) on this topic to date. The participants represent midwives from the majority of centres in New Zealand and in all practice settings, both urban and rural and aligns well with MOH midwifery workforce data (MOH 2009). There was an almost equal

representation of midwives main work types, employed or self-employed, and thus it was a large representative sample of New Zealand midwives. Therefore the results can be generalised to New Zealand midwifery practice.

Another strength of the study was that anonymity was preserved by the decision to employ a research assistant and also through the participants returning their completed questionnaires firstly to the School of Midwifery, Otago Polytechnic.

There were limitations of the study, mainly in regards to the design of the questionnaire. The pilot of the questionnaire led to changes with the Likert Scale being adjusted from ten points to five points. However despite undertaking the pilot study all of the possible design faults were not identified. The design may have excluded midwives participating in the survey if they believed that they did not undertake perineal assessment in everyday practice. It is possible that this could have been rectified by adding a question relating to how often the midwife undertook perineal assessment which led to the decision-making process regarding suturing or non-suturing. However it was anticipated that all the participants comments and experiences would add value to the research.

During the data analysis stage, it became obvious that by asking midwives to recall two different assessments undertaken on two different women meant that the data needed to be presented separately for each assessment undertaken. Comparisons could not be made as midwives were referring to two totally different women and that each may have had other influences that were not considered an influencing factor during either of the assessments undertaken.

Another limitation was that the actual time period that midwives recalled between the two separate perineal assessments undertaken was unknown. It is possible that midwives may have changed their practice setting or main work type between the two separate assessments that they recalled and therefore it is unknown if this could have influenced them differently for each assessment and decisions made.

The questionnaire had one very ambiguous question in section 1a and 1b relating to *skin to skin contact*. The meaning of this question was intended to relate to skin to skin

contact of the baby and the initiation of breastfeeding however, due to its ambiguity it is unknown if all the participants interpreted it as such, particularly as some midwives made reference to whether the question related to skin-skin alignment of the perineal tear. Therefore the findings relating to this question are open for interpretation and the influence of skin to skin contact and initiation of breastfeeding relating to suturing or non-suturing of perineal tears requires further exploration in future studies.

Another limitation in the design process of the questionnaire was that there was no option for non-applicable for the question in sections 1a and 1b relating to *woman's previous perineal outcome*. By not having this option suggested that perhaps only multigravida women were included in the study which was not the intention; an option for non-applicable should have been included for women who were primigravida.

The pilot had identified that the Likert scale would be easier to use if it ranged from one to five. This change was made for the full study. The decision was also made to combine Likert scale options 1 & 2 to represent *little influence* and 4 & 5 to represent *considerable influence*. This was for ease of illustrating the results and enabled the data to be described more succinctly.

The use of the REEDA scale was an option in question five and while it is mentioned in numerous studies relating to perineal care it is a tool used to aid midwives in postnatal healing of perineal tears rather than perineal decision to suture or not to suture. Whilst it may have been slightly misleading for the participants there were three midwives who reported that they had used the REEDA scale in practice to aid their decision-making.

### **5.7 Implications for Midwifery Practice**

There is a lack of research from a context of New Zealand midwifery practice relating to general perineal care and an absence of research relating to suturing versus non-suturing of spontaneous perineal tears. The findings from this research have emphasised that decision-making for midwives on this topic is a complex process. It would appear that confidence, knowledge and practice experience are crucial in supporting midwives in their decision-making process to suture or not to suture. This

study has highlighted that for some New Zealand midwives their main work type may have an influence on practice experience and therefore influence a midwife's confidence. However this requires further exploration to support or refute this finding. The effect of years in practice and the degree of influence on decision-making regarding suturing or non-suturing has been highlighted throughout this research project. As a profession it is important this is acknowledged and that we support our midwifery colleagues whilst they gain practice experience and therefore develop their own knowledge base which in turn will increase confidence in the decision-making process.

Clinical characteristics of the perineal tear were highly influential in the decision to either suture or not to suture and confidence in the identification of the perineal tear during the assessment process is crucial to enabling the decision-making process to occur. As discussed in chapter two, midwives require continuing education in assessment of perineal trauma (Robinson & Beattie, 2002; Sultan et al., 1995). However, the findings of this study suggest that all aspects of perineal care following birth such as assessment, identification of the tear, repair techniques, the health and wellbeing of the women and evidence to support practice are commonly part of the decision-making process. Therefore any professional development or education on the topic should be holistic and provide opportunities for midwives to explore the complexity of factors that may influence decisions regarding suturing or non-suturing of spontaneous perineal tears. Other than episiotomy rates and third/fourth degree tears there is no national data collected on perineal outcomes for women in New Zealand. A national approach to data collection is urgently required.

## **5.8 Future research**

Further research is required on general perineal care and in particular on the topic of suturing versus non-suturing of perineal tears. Certainly the literature explored in chapter two suggests that non-suturing of the perineal tear increases breastfeeding rates but short term outcomes for women, following either suturing or non-suturing appear to have little difference in the rate of healing. However more exploration of the long-term outcomes for women following suturing or non-suturing is required. Further research is required to ascertain if continuity of carer is influential in the decisions related to

suturing versus non-suturing of spontaneous tears. The results suggest that midwives working in a self-employed context believed that continuity of carer was more influential on their decision to suture than did those midwives employed within an institution. It is important that future studies clearly define the differences between meaning of continuity of carer and continuity of care as it was unknown what midwives in this study understood by this term.

Evidence from research was seen as a highly influential factor for midwives in this study but it is not clear which evidence midwives access and utilise to inform and support decisions. This could also benefit from further exploration.

The assessment phase of the perineal tear is crucial for midwives in their decision to either suture or not to suture and very few midwives in this study utilised assessment tools. Future research should ascertain if tools, such as the Peri-Rule™ (Tohill & Metcalfe, 2006) would benefit New Zealand midwives in their decision relating to suturing versus non-suturing. Further research is required which investigates and explores the influences of hospital policies and professional guidelines on midwifery practice.

## **5.9 Concluding Statement**

The aim of this study was to gain an understanding of factors that influence decision-making for New Zealand midwives in relation to suturing versus non-suturing of spontaneous perineal tears following normal birth. This study is, to my knowledge, the first New Zealand/Aotearoa midwifery research to be conducted exclusively on perineal care and is the largest cohort of midwives to be studied to date on this topic.

Regardless of midwives decisions to suture or not to suture, there were relatively similar factors that influenced either decision. Whilst certain factors were more influential than others in making this decision, the study has shown that New Zealand midwives are influenced by practice experience and confidence, consistent with findings from international studies: (Cioffi et al., 2008; Dahlen & Homer, 2008; Spendlove, 2005).

Proctor and Renfrew (2000) suggest that midwifery should be an evidenced-based profession. This study supported this concept as participants indicated that evidence from research was highly influential in supporting decisions. The study has identified factors and findings that are related to practice environments unique to New Zealand. Results suggest that a midwife's work type influences the decision to either suture or not to suture and this would benefit from further exploration. However, the strong influence that years in practice and practice experiences have on either decision, are transferable to midwifery practice outside of New Zealand.

This study has shown that midwives were not influenced by place of birth and suggests that midwives approach their decision-making from a women-centred context rather than being influenced by the environment. In addition, it has been identified that the inclusion of women in decision-making is common practice. Findings suggest that midwives carry a body of knowledge gained from experience which is used to guide both the midwife and woman in the decision-making process.

Clinical characteristics of the perineal tear were highly influential factors for midwives in the decision-making process. This finding complements earlier studies (Cioffi et al., 2008; Spendlove, 2005) that have also explored the significance of clinical characteristics on midwives decisions. Clinical findings identified during the assessment phase are vital components of decision-making however the findings of this research suggest that this is only one aspect of the process.

Overall, the results of this study have supported findings published in other studies (Cioffi et al., 2008; Dahlen & Homer, 2008; Spendlove, 2005). However, it has presented further influences that require consideration and further investigation: influence of continuity of carer, work settings and evidence from research. The midwives in this study appeared to navigate their way through the decision-making process by using clinical reasoning which was supported by knowledge, experience, confidence and physical cues obtained during assessment. This study has demonstrated that the decision-making process on either decision is multifactorial and that the decisions midwives make are complex and variable.

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## Appendices

### Appendix A

#### Letter from Otago Polytechnic Postgraduate Committee



15<sup>th</sup> July 2008

Elaine Gray  
15 Pankhurst Drive  
Woodend  
Christchurch 8255

Jean Patterson  
Forth Street, Private Bag 1910,  
Dunedin, New Zealand  
Telephone: 0800 762 799  
Facsimile: 03 472 8486  
Email: [dca.is@leotago.ac.nz](mailto:dca.is@leotago.ac.nz)  
Homepage: <http://www.leotago.ac.nz>

#### : Submission of research proposal

Dear Elaine

Congratulations on the submission of your research proposal.

The School of Midwifery Postgraduate Committee has approved your proposal and have provided some feedback which Sally Baddock will share this with you when you meet for supervision.

Some of this feedback will be useful to consider as you develop up and refine your methodology and literature review and no further drafts of your proposal are required by the Postgraduate Committee.

The next stage is preparing your ethics proposal for submission to the Otago Polytechnic Ethics Committee. An electronic copy of this form is on blackboard.

Our best wishes for your research project. I am sure it will be a valuable contribution to midwifery knowledge and practice. We look forward to hearing of your progress.

Jean Patterson  
Postgraduate Programme Coordinator

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## Appendix B

### Letter from Otago Polytechnic Ethics Committee



18 December 2008

Elaine Gray  
15 Panckhurst Drive  
Woodend,  
North Canterbury 7810

Dear Elaine,

**ETHICS 435 A study exploring factors that influence decision making for midwives: suturing versus non-suturing of spontaneous perineal tears.**

Thank you for your application. There are a few small amendments or additions the research ethics committee requires you to make:

- Please add to the information sheet a statement to the effect that no data will be presented in ways that permit identification of participating individuals. e.g. the single Chinese midwife on the West Coast who might be identifiable as a participant.
- Provide information on how people can withdraw their data – e.g. by contacting the research assistant or you.
- Please provide us with a copy of the follow up letter you intend to use that includes the statement that this has been sent out by the research assistant and that you have no access to the participants' identity.

We also wish to see the raw data stored at the School of Midwifery following completion of the project where it can be destroyed after the 5 years.

We deduce that the computer you store the data on will also be at your own home rather than e.g. at the College? Please confirm to us to us the only data that will be stored on a computer is the extracted data, i.e. no linking information.

Editorially you may wish to make the following small corrections:

- As the researcher I will not have any access to this information and there will be no identifying information on the questionnaires when they are forwarded to me. ...Return of the questionnaire implies that you have consented to participate in this research project.

Please respond to the committee by email with a short statement about how you have addressed these issues. Attach the revised letter and the follow up letter. You do not need to resubmit the whole application.

Sincerely,

**Alex Morales**  
Administrator  
Research Ethics Committee

cc Sally Baddock

---

Research Ethics Committee

Private Bag 1910  
Dunedin 9054

Ficetophone 0800 763 786  
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info@lekolago.ac.nz  
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## Appendix C

### Approval letter from Otago Polytechnic Ethics Committee

13 February 2009

Elaine Gray  
15 Panchurst Drive  
Woodend,  
North Canterbury 7810



Dear Elaine,

**ETHICS 435 A study exploring factors that influence decision making for midwives: suturing versus non-suturing of spontaneous perineal tears.**

Thank you for the amendments and additional information for your application. The Otago Polytechnic Research Ethics Committee grants you approval to commence your project.

I would remind you that at the conclusion of your research you should send a brief report with findings/conclusions to the Research Ethics Committee.

We wish you every success with this particular research project.

Yours sincerely,

**Alex Morales**  
Administrator  
Research Ethics Committee

cc Sally Baddock

---

Research Ethics Committee

Private Bag 1910  
Dunedin 9054

Freephone 0800 762 786  
Phone +64 3 477 3014  
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---

## Appendix D

### Information letter to participants of study

Otago Polytechnic  
Postgraduate School of Midwifery  
Private Bag 1910  
Dunedin

11<sup>th</sup> May 2009



#### **Factors that influence decision making for midwives: suturing versus non-suturing of spontaneous perineal tears.**

Dear Midwife

Please find attached a questionnaire about midwifery decision-making in relation to suturing versus non-suturing of spontaneous perineal tears after birth. It should take about 10-15 minutes to complete. This survey has been designed for all midwives regardless of your experience of perineal assessment and repair. I would appreciate your consideration in completing the questionnaire as the findings will contribute to New Zealand midwifery practice.

I am currently completing my Master of Midwifery at Otago Polytechnic and would like to invite you to participate in this survey which is part of my 3 paper thesis. Your participation in the survey is completely voluntary. The aim of my study is: *To explore factors that may influence midwives in their decision to suture or not to suture spontaneous perineal tears*

Permission has been granted from the New Zealand College of Midwives (NZCOM) National Committee to utilise the database of members. The selection process has been by confidential randomisation. To ensure your anonymity in the research project this letter and questionnaire has been generated from a research assistant. As the researcher I have no access to any participants' identity. The codes are purely for the research assistant to identify returned questionnaires. As the researcher I will not have any access to this information and there will be no identifying information on the questionnaire when they are forwarded to me.

Return of the questionnaire implies that you have consented to participate in this research project; however you may withdraw at any time up until the data is analysed by contacting my supervisor Dr Sally Baddock (contact details below). She will direct you to the research assistant. To protect your anonymity, names are not required on the questionnaire. I do not know who has received the questionnaire. No data will be presented in any way that will permit identification of participating individuals. All data I receive via the research assistant will be anonymous and will be read and analysed only by me as the researcher.

The finished research will be submitted for publication in the NZCOM Journal. Information from the research will be used in presentations at the NZCOM Conference and the Joan Donley Research Collaboration research forum.

A stamped address envelope is included for you to return the questionnaire. The research assistant will send a reminder and a further questionnaire at 2 and 4 weeks if the original questionnaire has not been returned.

If you have any further questions please contact me or my supervisor.

Researcher: Elaine Gray  
15 Panckhurst Drive, Woodend  
North Canterbury  
[elaineg61@xtra.co.nz](mailto:elaineg61@xtra.co.nz)  
03 3122646

Supervisor: Dr Sally Baddock  
Associate Head of School  
Otago Polytechnic School of Midwifery, Dunedin  
[sbaddock@tekotago.ac.nz](mailto:sbaddock@tekotago.ac.nz)  
0800762786

Once again thank you very much for taking the time to complete this questionnaire and contributing to midwifery knowledge in New Zealand.

Elaine Gray, Candidate for Master of Midwifery, Otago Polytechnic  
[www.tekotago.ac.nz](http://www.tekotago.ac.nz)

Appendix E

Research Assistant Confidentiality Form

Research Project: A study exploring factors that influence decision making for midwives:  
suturing versus non-suturing of spontaneous perineal tears

Researcher: Elaine Gray, Postgraduate student, Otago Polytechnic

I \_\_\_\_\_

Of

Agree to maintain the confidentiality of the participants and potential participants in the research titled: A study exploring factors that influence decision making for midwives: suturing versus non-suturing of spontaneous perineal tears to be conducted by Elaine Gray of 15 Panckhurst Drive, Woodend, North Canterbury.

I agree to:

- Maintain the names of the randomised sample and their allocated code in a password protected computer file on my personal computer
- Not discuss the list of names with anyone including the researcher
- At completion of the research, transfer the file of names and associated codes onto a computer disc in a sealed envelope to be sent to and stored by the School of Midwifery, Otago Polytechnic.

Signature Research Assistant

Date

Signature researcher

Date

## Appendix F

### Email correspondence from Dr Russell, Kaitohutohu of Otago Polytechnic

10/11/08

Kia ora Elaine,

Number 6 in your questionnaire allows for only one ethnicity to be declared.

I would wish to see that for any multiply identify, it was possible for them to so do. Otherwise you may be seen to be inadvertently in breach of the treaty.

Secondly, you need to talk about the Articles of the treaty if you are mentioning the Principles.

Iwi signed the treaty as did the Crown representatives based on what was promised within the three articles and within these, there were exclusive guarantees given to Iwi, (Article the Second) as well as to all who choose citizenship here and including Iwi Maori (Article the Third).

Iwi ones are very specific and so whilst the Principles are important, they are a very recent innovation of the Crown without appropriate or meaningful consultation with Iwi and ask us each to act in good faith.

The Crown have consistently regardless of government, been in breach of these principles. Hence the ability to use the Waitangi Tribunal until October for past grievances and from this time forward for present day and future breaches. That suggests to many Iwi, the lack of strength that the principles hold and how dedicated the Crown may or may not be to upholding the intent expressed within them .

The research and its significance for Iwi Maori as both Mana Whenua and Takata Whenua perhaps may need a little more clarity as well. I am unsure as to the how , but perhaps you might like to define the terms Mana whenua as opposed to Tangata (Takata) Whenua to demonstrate you know that.

That said, I wish to congratulate you on a very thorough application, on other support obtained and with these few inclusions, my own support in this regard to proceed with the research.

It would be advisable to attach a copy of this response to your application so Kai Tahu members on the Ethics committee can see where you have made the changes based upon my advice.  
I wish you well with the research .

Nahaku noa na Khyl

Koina, he ure ki a ohoku tupuna mai ra ano

Khyla Russell.BA, PGDA. PhD  
Kaitohutohu  
Senior Manager Maori  
Te Kuramatatini ki Otago.  
Otago Polytechnic  
Waea (03) 4796064  
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Waea pukorero 021 735587  
Waea whakaahua +64 3 471 6869

## Appendix G

### Questionnaire

## Appendix H

### Invitation and information letter to participants of pilot questionnaire

15 Panckhurst Drive  
Woodend  
North Canterbury 7610

26<sup>th</sup> January 2009

Dear

I would like to take this opportunity to thank you for agreeing to participate in the pilot of my questionnaire for my research proposal with Otago Polytechnic. All information obtained will be non-identifiable unless you chose to contact me or ask me to call you. I will use your findings and experience of completing the questionnaire to validate the questionnaire. It is important in the piloting of questionnaires to ensure that the process be completed is as near to actual would occur once the questionnaire is posted out the midwives.

Please find enclosed the letter of participation that all participants will receive plus the questionnaire. I have also attached a feedback sheet which I would appreciate you completing after completion of the questionnaire. The questions relate to how you found the questionnaire.

Please return both your completed questionnaire plus the pilot feedback form attached to me in the enclosed stamp addressed envelope by **9<sup>th</sup> February 2009**. Please add or write any suggestions or changes or any comments that you feel would benefit the questionnaire in any way.

Once again thank you for taking the time to be part of the pilot as it is an important aspect of my research. You will not receive another final questionnaire from me during the study time as you have already committed time and energy to the pilot of which I extend my thanks.

Yours sincerely

Elaine Gray

Candidate for Master of Midwifery, Otago Polytechnic

Contact details: [elaineg61@xtra.co.nz](mailto:elaineg61@xtra.co.nz)

Home: 033122646

Mobile: 0274 374 876

Appendix I

Feedback form for participants of pilot questionnaire

**Pilot survey feedback form: A study exploring factors that influence decision making for midwives:  
suturing versus non-suturing of spontaneous perineal tears.**

Please return this feedback along with your completed research pilot questionnaire to my home address in the enclosed SAE by 9<sup>th</sup> February 2009. Please feel free to also write on the questionnaire directly.

Were the instructions clear?
How long did it take to complete? Minutes and hours
Were the questions ambiguous?
Did you object to any questions, and if so, why?
Do you think any topic area has been omitted?

Please feel free to make any other comments on the questionnaire generally
--

**Thank you Elaine ☺**

## Appendix J

### Letter to New Zealand College of Midwives National Board

Postgraduate Students  
School of Midwifery  
Otago Polytechnic  
Dunedin

1<sup>st</sup> September 2008

Dear Karen and National Committee Members

At the May Committee meeting Julie and I independently presented our proposed research project towards completion of our Master of Midwifery through Otago Polytechnic. We asked permission to be able to utilise the New Zealand College of Midwives membership database to access midwives names and postal addresses in order to effectively survey midwives. Permission was granted by the Committee members with defined conditions, one of which was that midwives were to receive only one questionnaire from the two research projects.

As we proposed we would like to keep the National Committee informed of our progress as both our research proposals have been accepted by the Postgraduate Committee at Otago Polytechnic. We are now at the stage of applying for ethical approval from the Otago Polytechnic Ethics Committee to commence our research projects.

Once we have ethics approval we would like to be able to obtain a copy of the names and addresses of the midwife members of the NZCOM in two lists: employed and self-employed. We have consulted a statistician regarding the randomisation process to ensure midwife members receive only one questionnaire from either Julie or myself. The randomisation will be confidentially completed by an independent person to both of us.

Once again both Julie and I wish to acknowledge the support from the National Committee in permitting us access to the database.

Yours sincerely

Elaine Gray

Julie Richards

## Appendix K

### Approval letter from New Zealand College of Midwives National Board to access membership data-base



10 September 2008

Julie Richards  
210 Huntsbury Avenue  
Cashmere  
Christchurch 8022

Elaine Gray  
15 Panckhurst Drive  
Woodend 7610

Dear Julie and Elaine

#### **QUANTITATIVE RESEARCH PROPOSALS FOR NZ MIDWIFERY PRACTICE**

Thank you for your letter dated 1 September 2008.

As discussed at the 30 April 2008 National Committee meeting, National Committee have approved your access to the New Zealand of Midwives membership database list for your two quantitative research project surveys.

Approval is given on the basis that you will randomly select names from the employed and self employed members in the database. One questionnaire for both pieces of research will be sent out to these members.

Yours sincerely

Karen Guilliland  
CEO

## Appendix L

### Follow-up letter to participants

Otago Polytechnic  
Postgraduate School of Midwifery  
Private Bag 1910  
Dunedin



**22<sup>nd</sup> June 2009**

#### **Factors that influence decision making for midwives: suturing versus non-suturing of spontaneous perineal tears.**

Dear Midwife

This is a friendly reminder regarding my research project about midwifery decision-making in relation to suturing versus non-suturing of spontaneous perineal tears after birth.

I would really appreciate you completing and returning the questionnaire as the findings will contribute to New Zealand midwifery practice. To ensure your anonymity in the research project this follow-up letter as with the original letter and questionnaire has been generated from the research assistant. As the researcher I have no access to any participants' identity.

Please find enclosed the original introduction letter explaining the research project plus another questionnaire which should take about 10-15minutes to complete. A stamped address envelope is included for you to return the questionnaire.

If you have any further questions please contact me or my supervisor.

Researcher: Elaine Gray  
Baddock

15 Panckhurst Drive, Woodend  
School  
North Canterbury  
Dunedin

[elaineg61@xtra.co.nz](mailto:elaineg61@xtra.co.nz)  
03 3122646

Supervisor: Dr Sally

Associate Head of

Otago Polytechnic School of Midwifery,

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Once again thank you very much for taking the time to complete this questionnaire and for contributing further midwifery knowledge to the New Zealand context of practice.

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