

Is mode of delivery instrumental in women's physical and psychological outcomes after childbirth? Results from the UK National Maternity Survey 2010.

Project completed by Dr Ingrid Rowlands under the supervision of Senior Researcher, Dr Maggie Redshaw at the National Perinatal Epidemiology Unit (NPEU), University of Oxford, UK.

Applying for the CREATE Visiting Scholar Grant

In 2007, I travelled to the UK for the first time to present the results of my PhD work at the Society for Reproductive and Infant Psychology Annual Conference in Oxford. It was here that I first met Dr Maggie Redshaw in addition to a wonderful small group of psychologists, midwives, epidemiologists, clinicians and students all dedicated to reproductive, maternal and infant health. I also learnt that Oxford was home to the National Perinatal Epidemiology Unit (NPEU) and the place where Maggie was conducting her research in maternal health. In Australia, there are only a handful of researchers in the field of reproductive and infant psychology. So for a young PhD student writing her thesis on how women cope after miscarriage this was a very stimulating and inspiring conference for me. The trip had such an impact on me that my past PhD supervisor, Prof Christina Lee, recalls how on my return I claimed (with naive enthusiasm) that my goal was to help establish reproductive and infant psychology in Australia.

Since 2006, I completed my PhD and went on to work as a Postdoctoral Research Fellow on projects focusing on women's reproductive health. I have appreciated working on diverse projects over the past few years, and my current position is within the Gynaecological Cancers Group at the Queensland Institute of Medical Research in Brisbane, Australia. I have always been passionate about continuing research into maternal health, so when the opportunity arose to spend time working on a project with a senior researcher as part of the European Health Psychology Society's CREATE visiting scholar grant, I thought that it was the perfect excuse to spend some time working with Maggie within the NPEU.

Project Background

Physical and psychological problems after childbirth are common, and may have a significant negative and long-term impact on women's wellbeing and daily functioning (Saurel-Cubizolles, Romito, Lelong, & Ancel, 2000). The method of birth may be an important factor influencing women's wellbeing following birth, however, population-wide evidence is not available. Current evidence suggests that women who have instrumental births are more likely to be more likely to report perineal pain (Thompson, Roberts, Currie, & Ellwood, 2002) urinary incontinence, haemorrhoids and sexual problems (Lydon-Rochelle, Holt, & Martin, 2001; Schytt, Lindmark, & Waldenstrom, 2005) than are women who have had unassisted vaginal births. However, there are few studies that have been able to separately examine the psychological and physical outcomes for women who have delivered through assisted vaginal births, including forceps and ventouse-assisted vaginal births.

The physical symptoms reported by women after birth may be accompanied by psychological problems that can have a profound negative influence on women's personal relationships (Brown & Lumley, 2000; DiMatteo et al., 1996). In severe cases, a small proportion of women (1-6%) may develop symptoms associated with posttraumatic stress disorder after childbirth (Soderquist, Wijma, & Wijma, 2002) and these symptoms may be experienced more often in women who have had unplanned caesareans (Ryding, Wijma, & Wijma, 1997). This study examines the physical and psychological outcomes of women in the months after birth, and whether these vary by mode of birth. The results of this study will provide

important information for health professionals about those women who are in greatest need of support after childbirth.

Research Questions

1. Does women's psychological health and wellbeing vary according to the mode of birth?
 - a. Do women who have assisted vaginal births and operative births experience poorer psychological and physical health than women who have had unassisted vaginal births?
2. What are the changes in women's psychological health and wellbeing during the first 3 months after birth?

UK National Maternity Survey 2010

The project was a secondary analysis of data collected as part of the National Maternity Survey 2010 carried out by the NPEU (Redshaw & Heikkila, 2010). A random sample of women who had recently delivered a child in the UK were surveyed about their experiences during pregnancy, birth and after birth. Data are available on 5332 women in total.

Method & Analysis

We focused on questions from the survey asking women about:

- Mode of delivery [i.e. unassisted vaginal births vs. assisted vaginal births (ventouse, forceps) vs. operative births (planned caesarean, unplanned caesarean)]
- Psychological symptoms (e.g. depression, anxiety)
- Posttraumatic stress symptoms (e.g. flash-backs, difficulties concentrating, sleep problems not related to the baby)
- Bodily changes (e.g. stress incontinence, backache)
- Birth-related symptoms (e.g. painful stitches, wound infection)
- Breastfeeding problems
- Severe fatigue

Symptom data is available at 10 days, 1 month and 3 months after birth. We used logistic regression models to examine whether women's psychological and physical outcomes varied according to the mode of birth, while adjusting for key sociodemographic variables (e.g. mother's age, education, ethnicity), parity and all other symptoms.

Preliminary results

Characteristics of the women

Surveys were sent to 9858 women who had recently given birth in the UK and 5332 (54%) women responded. More than half (58%) of the women who responded to the survey were between the ages of 25 and 34 years. The majority were married, had just given birth to their first baby, had left school after the age of 19 years, were from a white ethnic background and were born in the UK. Most women ($n = 3275$, 61%) reported having unassisted vaginal births. Ventouse-assisted vaginal births and forceps-assisted vaginal births were reported less frequently by 6% ($n = 302$) and 7% ($n = 359$) of women, respectively. Of women who had operative births, 12% ($n = 630$) of women had a planned caesarean and 13% ($n = 675$) of women had an unplanned caesarean. Data on women who did not respond to the survey was provided by the Office for National Statistics. Comparisons between respondents and non-respondents showed that non-respondents were more likely to be younger, socially disadvantaged and from a black minority ethnic background.

When we examined the characteristics of the women according to mode of birth we found that women who had unassisted vaginal births were more likely to be younger, not married, to have previously given birth and less likely to have left school after the age of 19 years. In contrast, women who reported having a ventouse-assisted vaginal birth were more likely to be married, to have recently given birth to their first baby, to have left school after the age of 19 years and to be from a white ethnic background. Women who had a forceps-assisted vaginal birth were similar to women who had a ventouse-assisted vaginal birth on marital status, parity and ethnicity but they were less likely to have left school after the age of 19 years. Those women reporting an unplanned caesarean were also similar to women who had had assisted vaginal births on marital status and parity but they were more likely to be from a black minority ethnic background and not born in the UK. Women who had planned caesareans were more likely to be older, married and to have previously given birth than women delivering through other modes of birth.

Wellbeing after birth

Overall, women's symptoms were highest at 10 days after birth and significantly improved over the following 3 months. However, the results did vary considerably according to mode of birth, particularly when adjusting for sociodemographic variables, parity and the other psychological and physical symptoms present at each time point.

Psychological symptoms by mode of birth

'The blues'

Women who had unplanned caesareans had a modestly increased risk of 'the blues' at 10 days after birth (OR = 1.27; 95% CI: 1.04-1.56) than women who had unassisted vaginal births, but there was no association found at 1 month and 3 months after birth.

Posttraumatic stress-related symptoms & Anxiety

Women who had unplanned caesareans had an increased risk of developing two or more PTSD-related symptoms (e.g. flashbacks, sleep problems unrelated to the baby) at 1 month after birth than women who had unassisted vaginal births (OR = 1.52; 95% CI: 1.01-2.29). Similarly, women who had a forceps-assisted vaginal births showed a somewhat greater risk of PTSD-related symptoms (OR = 1.27; 95% CI: 0.76-2.11) and symptoms of anxiety at 1 month after birth (OR = 1.30; CI: 0.90-1.89) than women who had unassisted vaginal births (see unadjusted percentages in Table 1). Although PTSD-related symptoms at 3 months were significantly lower for women who had unplanned caesareans (OR = 1.16; 95% CI: 0.67-2.01), these symptoms appeared to remain high among women who had forceps-assisted vaginal births (OR = 1.86; 95% CI: 1.06-3.24).

Physical symptoms by mode of birth

An increased risk of fatigue was found only at 10 days after birth for women who had ventouse-assisted vaginal births (OR = 1.35; 95% CI: 1.02-1.79). Women who had caesarean section births were at reduced risk of having bodily changes (e.g. stress incontinence, backache, painful intercourse) at 10 days, 1 month and 3 months. By comparison to the unassisted vaginal births, birth-related symptoms (e.g. painful stitches, wound infection) were also significantly increased at the three time points for all the groups (assisted vaginal and operative births) and were particularly high among the forceps-assisted vaginal births. There was no association between breastfeeding and mode of birth at any time point.

Summary

Our findings suggest that the mode of birth can have a profound impact on women's psychological and physical outcomes in the first few months after birth. Women who had unplanned caesareans and forceps-assisted vaginal births reported the greatest reductions in quality of life, while women who had unassisted vaginal births and planned caesareans were the least affected by the birth process. Most women appeared to improve physically and emotionally with time, however, women who had a forceps-assisted vaginal birth appeared to have ongoing psychological PTSD type symptoms.

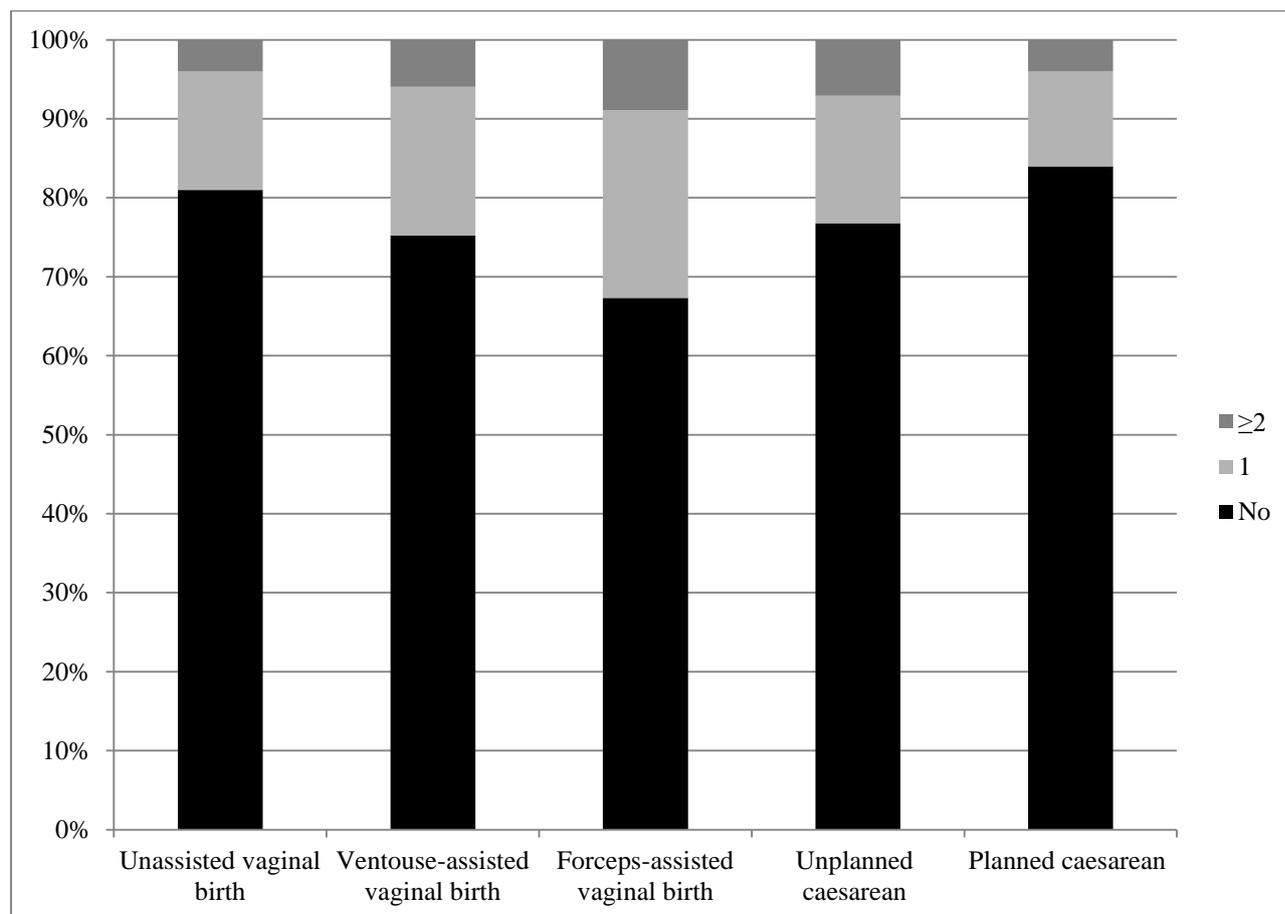
The experience of childbirth can be complex due to the various individual, medical and social factors that can interact to influence women's experiences and outcomes. Pregnancy and birth, while significant, joyous events for many women can include events and processes that are confusing, anxiety-provoking, painful and in some cases life-threatening. In this study, we provided additional evidence for the importance of mode of birth, however, pre-existing experiences and those occurring after birth may also be significant in increasing women's vulnerability to distress and maintaining the distress (Slade, 2006). The development of preventative strategies and supportive strategies during pregnancy and birth would be an initial step towards improving women's long-term reproductive health and wellbeing.

Thank you

As I reach the end of my third week at the NPEU, I realise that I have already learnt much more about maternal health from working with Maggie on the project, and from talking to the other researchers within the unit. I know that the next two weeks that I have left here in Oxford will be very rewarding.

I would like to thank Dr Maggie Redshaw for the time she has spent with me on this project, and both her and her colleagues within the NPEU for welcoming me into the unit. I am very grateful for this opportunity and I would also like to thank the EHPS for providing this grant to early career researchers. And last, but not least, I would like to thank Dr Penny Webb my current supervisor and Prof Christina Lee for supporting and encouraging me to undertake this project.

Table 1. Number of PTSD-related symptoms reported by the women at 1 month according to mode of birth



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