

# Research 2004-2005

## Reproductive and Perinatal Health Care



**Karolinska  
Institutet**



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Perinatal Health Care**



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Ulla Waldenström

Department of Woman and Child Health

Division of Reproductive and Perinatal Health Care

Retzius väg 13 A–B

SE-171 77 Solna

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# Introduction

This report aims to describe the research that is being carried out at Karolinska Institutet in the Caring Sciences, within the specific field of Reproductive and Perinatal Health Care. The research is conducted at different departments, such as the Department of Woman and Child Health, Department of Nursing, Department of Clinical Neuroscience, Department of Public Health Sciences and Karolinska Institutet at Danderyd Hospital (KIDS).

The report includes descriptions of research projects in progress and completed projects if these were finalised in 2004 or 2005. It also includes lists of publications, doctoral examinations and licentiate examinations during the period 2004–2005, or prior to this period if the thesis was based on a study that is still in progress. Also, a presentation of the researchers and associates/co-authors is given.

We hope that this report will provide useful information to colleagues at Karolinska Institutet and other universities in Sweden and abroad, and to clinicians and students. Our aim is to further stimulate research in this field, to make our research findings accessible for clinicians and to encourage future networking and collaboration.

*Ulla Waldenström*

Professor  
Department of Nursing

*Kyllike Christensson*

Professor  
Department of Woman and Child Health

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# Research projects

## Childbearing in the Swedish context

### Women's experiences of childbirth – the KUB study

The general aim of this project was to investigate experiences of childbirth in a national sample, from a wide range of perspectives. All women who paid their first visit to any of the 608 antenatal clinics in Sweden, during 3 predetermined weeks within 12 months (in May and September 1999, and January 2000), were invited to participate. The only exclusion criterion was insufficient command of the Swedish language to complete questionnaires. After each recruitment week a consent form including each woman's contact details was sent to the research team, and a first questionnaire was then posted to the women on the list. A second one was posted two months after the birth, and they were sent a third questionnaire one year after the birth. To study whether the sample was representative of childbearing women in Sweden in general, respondents were compared with all women who gave birth in Sweden in 1999, according to the Swedish Medical Birth Register. Besides obstetric and infant data, the register includes information on parity, maternal age, civil status, country of birth, and smoking habits. The total number of women booked at all antenatal clinics in Sweden during the 3 recruitment weeks was approximately 5,500, an estimate based on data from the national Medical Birth Register and from the midwives involved in antenatal care. Of these women, around 4,600 were eligible for the study after excluding women with miscarriages (275), women who were booked at non-participating clinics (75), and non-Swedish-speaking women (550). Altogether, 3,293 women (72%) consented to participate in the study, of whom 3061 completed the first questionnaire, 2,762 the second and 2,563 the third.

**Funding:** The Swedish Research Council; the Swedish Foundation for Health Care Sciences and Allergy Research; the Centre for Clinical Research Dalarna (CKF); University College of Dalarna ; the Centre for Caring Sciences (CfV) at Karolinska Institutet; the Health Care Sciences Postgraduate School at Karolinska Institutet; the Crime Victim Foundation.

**Status:** Most of the data from this study have been analysed and 25 articles have been written (18 published, 2 in press and 5 submitted). Three doctoral theses based on data from the study have been completed, and three are ongoing.

## Women's health during pregnancy and after birth

*Erica Schytt, Christine Rubertsson, Ingela Rådestad, Gunilla Lindmark, Birgitta Wickberg, Petter Gustavsson, Ulla Waldenström*

Physical health, such as tiredness, headache, and pain in the neck, shoulder and low back, were common problems at two months and also one year after childbirth. At two months, pain from caesarean section, dyspareunia, and haemorrhoids were frequent problems, whereas stress incontinence was often reported at one year. At two months after birth 91 per cent of the women said self-rated health (SRH) was 'very good' or 'good', and 86 per cent stated this at one year. Low SRH was associated with symptoms that affected general physical functioning and well-being, such as tiredness, headache, musculoskeletal problems, mastitis, perineal pain, dysuria, stomach-ache and nausea. Complaints related to more specific situations, such as dyspareunia, constipation and stress incontinence were not associated with SRH.

One year after the birth, 22 per cent of the women had symptoms of stress incontinence but only 2 per cent said it caused them major problems. The strongest predictor was urinary incontinence (overall leakage) 4–8 weeks after a vaginal delivery, as well as after a caesarean section. Other predictors in women with a vaginal delivery were: multiparity, obesity and constipation 4–8 weeks postpartum.

Mental health, such as depressive mood was identified by the Edinburgh Postnatal Depression Scale (EPDS) in early pregnancy, two months and one year after birth. In early pregnancy, 8 per cent of the women scored  $\geq 14$  on the EPDS. Three risk factors were found to be the same for primiparous and multiparous women: lack of support from partner during pregnancy; two or more stressful life events in the year prior to present pregnancy; and native language other than Swedish. In addition, the following risk factors were identified in primiparas: unfortunate timing of pregnancy, previous miscarriage and age less than 25 years; and the following in multiparas: lack of support from person other than partner when coming home with the newborn baby, single status, negative experience of previous birth, wishing to have a caesarean section, and unemployment.

Twelve per cent of the women scored above an EPDS score of 12 at two months postpartum, and of these, 6.5 per cent were identified with depressive symptoms only postpartum, and 5.8 per cent with depressive symptoms both in pregnancy and postpartum. Unemployment, lack of support and physical health problems were the most important factors associated with a postpartum depressed mood in both groups. Women with depressive symptoms both in pregnancy and postpartum were more socially disadvantaged, with increased relative risks in most factors investigated. Postnatal problems, such as dissatisfaction with support from relatives and factors related to the infant, were only associated with depressed mood postpartum.

The prevalence of recurrent or sustained depressive symptoms (EPDS  $\geq 12$  on all three evaluations) was 3%. Three factors were associated with depressive symptoms: two or more stressful life events in the year prior to pregnancy, native language other than Swedish and unemployment. It was suggested that a psychosocial history in early pregnancy, including questions about stressful life events, native language and employment status, identified women at risk.

**Status:** Two articles published on physical symptoms and self-rated health, and one submitted. One qualitative study on women's interpretation of self-rated health is being analysed. Three articles published on depressive symptoms.

### Women's expectations of antenatal and intrapartum care

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*Ingegerd Hildingsson, Ingela Rådestad, Christine Rubertsson, Ulla Waldenström*

Eight per cent of the women stated that they would prefer to have a caesarean section when asked in early pregnancy. Wishing to have a caesarean section was associated with a previous caesarean section and negative birth experience in multiparas, and with fear of giving birth.

One per cent of the women expressed an interest in having a home birth when asked both during pregnancy, two months and one year after the birth, and 8 per cent expressed an interest in birth centre care on all three occasions. An interest in having a home birth was associated with wishing to have the baby's siblings and a female friend present at the birth, not wanting pharmacological pain relief during labour, low-level education and dissatisfaction with medical aspects of intrapartum care. An interest in birth centre care was associated with having experienced control during labour and birth, not wanting any pharmacological pain relief, and preferring to have a known midwife at the birth.

Checking the baby's health was regarded as the most important aspect of antenatal care, followed by checking the mother's health and making the partner feel involved. Seventy per cent preferred to follow the standard schedule of antenatal visits, 23 per cent preferred more and 7 per cent fewer visits. In primiparas, age less than 25 years, a previous miscarriage and assisted conception were associated with wishing to have more visits; in multiparas, previous miscarriage, previous stillbirth and a previous negative birth experience had this association. Wishing to have fewer antenatal visits was associated with being over 35 years of age and wrong timing of pregnancy among primiparas, and with having more than two children and wrong timing of pregnancy in multiparas. Most women (97%) considered that continuity of midwife carer during pregnancy was important.

**Status:** Three articles published.

## How much influence do women have on mode of delivery? Predictors of caesarean section with special emphasis on women's preferences in early pregnancy

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*Ingegerd Hildingsson*

The objective of this study was to investigate factors associated with having a caesarean section, with special emphasis on women's preferences in early pregnancy. A total of 2,878 women in the KUB study were included. Data were collected from the Swedish Medical Birth Register and from two questionnaires: in early pregnancy and two months after birth.

**Status:** Manuscript submitted.

## Attendance and non-attendance at childbirth education classes during pregnancy

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*Helena Fabian, Ingela Rådestad, Ulla Waldenström*

Most primiparous women (93%) attended antenatal classes preparing for childbirth and parenthood, and the majority of the multiparas (81%) did not. Having a native language other than Swedish was associated with non-attendance in both primiparas and multiparas. In addition, the following factors were associated with non-attendance in the primiparas: unemployment, smoking during pregnancy, having considered abortion, and having had few antenatal check-ups. The following factors were associated with non-attendance in the multiparas: being over 35 years of age, low level of education, pregnancy unplanned but welcome, having had counselling because of fear of childbirth, and expressing a need for such counselling.

Seventy-four per cent of first-time mothers stated that antenatal education helped prepare them for childbirth, and 40 per cent felt it prepared them for early parenthood. One year after giving birth, 58 per cent of the mothers had met with other class participants. These outcomes were associated with the number of class sessions. When controlling for the selection of women into participants and non-participants, no statistical differences were found concerning memory of labour pain, mode of delivery, overall birth experience, duration of breastfeeding, and assessment of parental skills. However, participants had a higher rate of epidural analgesia. Mothers who were young, single, had a low level of education, lived in a small city, and smoked were less likely to find the classes helpful.

**Status:** Two articles published. Ongoing analyses of parental education at the Child Health Clinics during the infant's first year.

## Women's experiences of maternity care and child health clinic care

*Ulla Waldenström, Ingegerd Hildingsson, Annica Örtenstrand, Ingela Rådestad, Ann Rudman*

**Antenatal care:** The vast majority of women (88%) were satisfied with antenatal care overall, but less satisfied with emotional (77%) than with medical (82%) aspects. The strongest predictor of dissatisfaction was the woman's opinion that the midwife had not been supportive and not paid attention to her partner's needs. Twenty-five per cent followed the standard visiting schedule for a normal pregnancy, 57 per cent made more visits and 17 per cent fewer visits. The number of visits made was associated with parity, medical diagnosis, depressive symptoms, level of education and women's preferences in early pregnancy. No association was found between number of visits and satisfaction, but women's own opinion that they had too few visits was associated with dissatisfaction with both medical and emotional aspects of care, and the opinion that they made too many visits with regarding to the emotional aspects of care.

**Intrapartum and postpartum care:** 10 per cent of women were dissatisfied with intrapartum care and 26 per cent with postpartum care. Risk factors in early pregnancy for not being satisfied were: low education, lack of support by partner and having many physical symptoms. An emergency operative delivery increased the risk of not being satisfied with intrapartum care, and neonatal transfer increased the risk of being dissatisfied with both episodes of care. Smaller units and family-oriented wards were associated with a positive experience of postpartum care, whereas the opposite was found regarding very early discharge. Dimensions of care associated with a more negative overall assessment were mainly related to psychological aspects, such as no opportunity to talk through the birth experience, lack of support by the midwife attending the birth, and little involvement in decision-making, time for personal questions and encouragement.

**CHC care:** 79 per cent of the women were satisfied with care received at the Child Health Clinic (CHC) during the infant's first year, and 21 per cent were dissatisfied or had mixed feelings. Psychological factors, such as maternal depressive symptoms and worry about taking care of the newborn baby, and serious infant feeding problems were predictors of more negative or mixed feelings. About one in three women were dissatisfied with the attention paid to their own needs, and a similar proportion said information about vaccinations was insufficient. Out of four sub-groups, i.e. mothers who had infants with feeding problems and mothers with depressive symptoms at 2 months, 1 year, and on both occasions, the last group was the most dissatisfied with the nurse and the time allocated to different issues.

**Status:** Three articles published, one in press and one submitted. Ongoing analyses of satisfaction with postpartum care based on person-oriented analysis.

## Women's experience of childbirth

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*Ulla Waldenström, Ingegerd Hildingsson, Christine Rubertsson, Ingela Rådestad, Lars Irestedt*

Seven per cent of the women had a negative birth experience. The following risk factors were found: 1) factors related to unexpected medical problems, such as emergency operative delivery, induction, augmentation of labour, and infant transfer to neonatal care; 2) factors related to the woman's social life, such as unwanted pregnancy and lack of support from partner; 3) factors related to the woman's feelings during labour, such as pain and lack of control; and 4) factors that may be easier to influence by the care providers, such as insufficient time allocated to the woman's own questions at antenatal check-ups, lack of support during labour and administration of obstetric analgesia.

Forty-seven per cent of the women made the same assessment of pain intensity at one year as they did at two months after the birth, and 60 per cent made the same assessment of childbirth overall. One year after the birth, 35 per cent recalled pain as less severe and 18 per cent as more severe; and 24 per cent said labour and birth overall was more negative, whereas 16 per cent said it was more positive.

Changing the assessment from positive to less positive, mostly to 'mixed feelings', was associated with: difficult childbirth such as painful labour and caesarean section, dissatisfaction with intrapartum care, and psychosocial problems such as single status, depressive symptoms and worry about the birth in early pregnancy. Changing the assessment from negative to less negative was associated with being less worried about the birth in early pregnancy and a more positive experience of the support by the birth-attending midwife.

Recollection of severe pain was associated with a high rate of pain relief use, suggesting that long-term memory of labour pain differs from pain measured during labour and soon after the birth. Women who received epidural analgesia seemed to have greater difficulty in forgetting pain when asked one year postnatally. The converse applied for women who had Entonox only. Different explanations of these findings are discussed.

**Status:** Three articles published, one in press.

## Fear of childbirth and subsequent mode of delivery and experience of the birth

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*Ulla Waldenström, Elsa-Lena Ryding, Ingegerd Hildingsson*

Ninety-seven women (3.6%) had very negative feelings about the delivery in early pregnancy, and about half of them underwent counselling. In addition, 193 women (7.2%) who did not have very negative feelings during the second trimester underwent counselling later in pregnancy. Antenatal fear of childbirth was associated with a 3–6

times higher rate of elective caesarean sections, and no difference in emergency caesarean section rate and assessment of childbirth overall compared with the reference group. However, these findings only applied to women who underwent counselling. Childbirth fear without counselling was not associated with the caesarean section rate but with a more negative birth experience. Regression analysis showed that childbirth fear in combination with counselling was associated with a “normal” childbirth experience even when caesarean section was included in the model, suggesting that counselling as such had an effect, regardless of mode of delivery.

**Status:** One article in press.

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### Breastfeeding and length of postpartum stay

*Ulla Waldenström, Clara Aarts*

The median duration of any breastfeeding was 7 months in women discharged on Day 1, and 8 months in women discharged on any of the following days, a non-significant difference ( $p=0.66$ ). Besides hospital policies regarding length of stay (residential area) and number of home visits, early discharge was associated with the following maternal characteristics, which could be divided into three categories: 1) older, multipara, many children; 2) positive experience of the first breastfeeding after birth; 3) low level of education, financial problems, smoking, lack of support from partner. Late discharge was associated with operative delivery, preterm birth and low infant birth weight. When these factors were controlled for by Cox regression analysis, no statistical differences were found between the six groups in the relative risk of discontinuing to breastfeed. Breastfeeding problems, such as engorgement and mastitis did not differ, but women discharged on Day 6 or later had fewer problems with sore or cracked nipples during the first week and more problems 4–8 weeks postpartum.

**Status:** One article published.

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### Partner violence after childbirth

*Ingela Rådestad, Christine Rubertsson, Marie Ebeling, Ingegerd Hildingsson*

Two per cent of the women had been hit by their partner during the first year after childbirth. The risk increased in women who were aged 24 years or younger, unmarried, born in countries outside Europe, with a partner born outside Europe, had a low level of education, and were unemployed. In early pregnancy, women with back pain, a chronic illness, coital pain, frequent depression-related symptoms, stomach pain, or urinary tract problems were hit more often than others after childbirth.

**Status:** One article published.

## **A longitudinal study of personality disorders and psychiatric symptoms during pregnancy and postpartum, and the relationship with experiences of birth and motherhood.**

*Margaretha Bågedahl-Strindlund, Karin Börjesson, Sonja Ruppert, Jan Wager*

The general aims of this study were to examine the prevalence rate of personality disorders (PDs) and psychiatric symptoms among childbearing women. The study also aimed to elucidate the importance of these factors for women's birth experiences and experiences of motherhood. It is a longitudinal population-based study, comprising 625 consecutively included primiparous women. The setting of the study was the southern part of the Stockholm area. Self-report questionnaires were used during pregnancy, 2 weeks, 3 months and 18 months following delivery. The prevalence rate of PDs during pregnancy was 6.4%. PD was strongly associated with psychiatric symptoms during and after pregnancy. A higher level of psychiatric symptoms was found in pregnancy than postpartum. Psychiatric caseness during pregnancy was strongly associated with caseness postpartum. In addition, socio-economic status, younger age and previous treatment for mental problems were identified as risk factors. Regarding their global experience of birth, no significant differences were found between women with PDs or defined as psychiatric cases, and women without any mental problems. The strongest predictors of having had a negative global experience of birth were to have been instrumentally vaginally delivered and to have received epidural analgesia. A strong relationship was found between PDs and psychiatric caseness during pregnancy, and a less favourable adjustment to motherhood. Other important predictors of a less favourable adjustment were multiple births and being single / living alone.

Key conclusions: A strong relationship between long-lasting psychiatric illness and personality disorders in childbearing women was found. A strong association was also found between psychiatric symptoms during pregnancy and the postpartum period. Obstetric factors such as instrumental delivery are of greater importance than mental problems during pregnancy for women's global experience of birth. The process of adjustment to motherhood was impaired in women with mental problems during pregnancy. PD was as negative for adjustment to motherhood as psychiatric caseness. It is important to pay attention to women with deviant personality characteristics and psychiatric illness.

**Funding:** Karolinska Institutet; the Magnus Bergvall Foundation; Stockholm County Council; the Söderström-Königska Foundation; the Swedish Foundation for Health Care Sciences and Allergy Research; the Bror Gadelius Memorial Foundation; the Salus Foundation; Arne Nyström's Memorial Foundation; the Psychiatric Foundation and the Swedish Psychiatric Association.

**Status:** Most of the data in this study has been analysed and so far one thesis and three articles have been written (one article published; two articles submitted and undergoing the review process).

## Maternal and infant outcomes related to labour-ward routines

The aim of the project is to investigate how some of the most commonly used routines during labour and childbirth influence maternal and infant outcomes at a large hospital in Sweden. The study is based on data from healthy women with normal pregnancies and a spontaneous start of labour, and their medical outcome and experience of birth. The hospital where the study is conducted has approximately 8,000 deliveries each year. The project was started during a period when many women in labour were referred from the hospital, due to lack of maternity beds at the onset of labour. Midwives working at the labour ward suspected that this routine affected women and the outcome of the labour. Results from the first study led to an interest in how other routines, such as epidural analgesia during labour and treatment with oxytocin, affect mother and infant in different ways.

**Funding:** The Department of Obstetrics and Gynaecology, Danderyd Hospital; the Swedish Foundation for Health Care Sciences and Allergy Research; Karolinska Institutet; Praktikertjänst AB.

**Status:** Two doctoral theses based on data from the study in progress.

## A comparative study in Stockholm of labour outcome and women's perceptions of being referred in labour

*Ingela Wiklund, Ann-Sofi Matthiesen, Birgitta Klang, Anna-Berit Ransjö-Arvidson*

The objective was to examine the outcome of labour and women's perceptions of being referred after the onset of labour. Prospective parents in Stockholm can choose in which of the five hospitals they want to give birth. In reality, there is a lack of maternity beds in Stockholm to implement this policy, and therefore nearly 10 per cent of women in labour are referred during labour. The study population was selected from one of the five hospitals. Included in the study were 266 women in labour, with a 37–42 week uncomplicated pregnancy, fetus in the vertex position and spontaneous onset of labour. During pregnancy, all the women had chosen the same labour ward where they planned to deliver. However, at the onset of labour half of the women, (case group n 133) were referred to another maternity unit, due to lack of space in the labour ward. For every referred woman a control woman, matched for age, parity and date of delivery, was selected, with the same inclusion criteria, except that of being referred (control group n 133).

A questionnaire with closed and open questions was posted to the women after birth and used to collect quantitative and qualitative data on the outcome of labour and the women's perceptions of referral during labour.

Results revealed that routines such as epidural analgesia ( $p < 0.002$ ), episiotomy ( $p < 0.015$ ) and morphine/pethidine during labour ( $p < 0.023$ ) were more common in

the referred group. The women in the referred group considered to a greater extent that the referral during labour had affected their emotional state ( $p < 0.001$ ). Women in both groups had been worried during pregnancy by the thought of having to be referred when labour started, and the referral had caused practical problems, stress and a feeling of not being welcome in the referral labour ward. The study concluded that referral during established normal labour may affect labour outcomes. The possibility that they might be referred worried women during pregnancy. Maternity policies and practice should be organised so that caring goals, such as continuity of care and women's participation in birth planning, can be met.

**Status:** One article published.

### **Epidural analgesia, breastfeeding success and related factors – a review of maternity records**

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*Ingela Wiklund, Margareta Norman, Ellika Andolf, Kerstin Uvnäs Moberg, Anna-Berit Ransjö-Arvidson*

The objective of this comparative retrospective study was to compare breastfeeding outcome in response to factors influencing breastfeeding success among women who had received epidural analgesia during labour with a group who had not. The study was carried out in a large delivery ward in Stockholm. All maternity records from women who had given birth at the hospital and who had received an epidural during labour, were included in the study ( $n=585$ ). For every woman who had been given an epidural, a control woman who had not received epidural analgesia during labour, matched for parity, age and gestational week, was included in the study. Patients who had had an emergency caesarean section, vacuum extraction and forceps delivery were thereafter excluded. Also duplex pregnancies, breech presentations and intrauterine fetal death, neonates with Apgar score  $>7$  at five min and/or care at NICU were excluded ( $n=351$  pairs). Initiation of breastfeeding, supplements given during hospital stay, and breastfeeding at discharge were studied in response to epidural analgesia during labour, including administration of oxytocin, parity, length of first and second stage of labour and birth weight.

**Status:** Analysis still in progress. One article in manuscript.

### **Short- and long-term decrease of blood pressure in women during breastfeeding**

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*Ingela Wiklund, Wibke Jonas, Anna-Berit Ransjö-Arvidson, Eva Nissen, Ellika Andolf, Peter Henriksson, Kerstin Uvnäs-Moberg*

The objective was to investigate the pattern of maternal blood pressure in response to breastfeeding two days after delivery and during a six-month follow-up period.

Fifty-seven healthy primiparae with normal deliveries were consecutively recruited to the study. Blood pressure was measured in connection with a morning breastfeeding session two days after birth. Of these, sixteen women continued to have their blood pressure measured before and after breastfeeding during a six-month follow-up period.

Blood pressure two days after birth was recorded at 5 minutes before skin-to-skin contact and at 10, 20, 30, and 60 minutes after the onset of breastfeeding.

The results showed that systolic blood pressure and diastolic blood pressure fell significantly in response to breastfeeding two days after birth. Both systolic blood pressure and diastolic blood pressure fell significantly during the six-month follow-up period and in addition, blood pressure continued to fall significantly in response to most of the observed breastfeeding sessions during the entire observation period.

This study confirms that blood pressure in lactating mothers declines after the onset of suckling. It further shows that basal blood pressure exhibits a continued fall for at least six months in breastfeeding women.

**Status:** One article submitted and one article in manuscript.

## **Elective caesarean section versus vaginal delivery – personality, breastfeeding, medical outcome, and experience of childbirth**

The demand for caesarean section on maternal request is a relatively new phenomenon. The situation is complicated by the lack of relevant studies on short- and long-term complications after caesarean section on healthy women without medical complications, in comparison with vaginal delivery. Since there is no scientific evidence for or against planned caesarean section, advice to parents cannot be evidence-based.

The aim of this project was to compare medical outcome, breastfeeding, personality and birth experience in healthy primiparas with normal pregnancies and elective caesarean sections (study group n 250) or planned vaginal delivery (control group n 250).

Women who had chosen to have caesarean sections were included in this prospective cohort study and compared with women who intended to give birth vaginally. Maternal and fetal outcome, pain levels, breastfeeding outcome, birth experience and expectations before birth were investigated using a self-designed questionnaire, together with two established psychological tests, in gestational week 38, and two days, three months and nine months postpartum. In addition, medical data are extracted from the records.

**Funding:** Stockholm County Council; Praktikertjänst AB; BB Stockholm.

**Status:** Ongoing data collection and analysis.

## Estimated and calculated blood loss after caesarean section and vaginal delivery

*Christina Larsson, Ingela Wiklund and Erika Andolf*

Excessive bleeding after delivery has always been one of the major threats to women. Although pregnancy implies an increase in the blood volume by roughly 1,000 ml, strict control of haemorrhage is necessary. Bleeding from an atonic uterus or lacerations may be profuse and amount to a couple of litres within minutes. Anaemia increases the risk of infection and interferes with recovery after delivery. It may therefore impair early infant contact during this important period. Obstetric haemorrhage is usually visually estimated. Sometimes swabs, pads and diapers are weighed and the contents of drainage bottles measured. In obstetrics the estimation is influenced by the amount of amniotic fluid and blood in the placenta. Few recent studies have evaluated the accuracy of visual assessment of blood loss in obstetrics. Studies of the estimation of haemorrhage after delivery are few and not relevant, due to the change in anaesthesiology and surgical techniques during recent years. The aim of this study was to compare estimated blood loss calculated after vaginal delivery with that calculated after elective caesarean section.

After vaginal delivery, blood loss was visually estimated by the midwife, and when results were considered unreliable, pads, swabs and diapers were weighed. After caesarean delivery, blood loss was estimated by the obstetrician and the anaesthetist nurse. Both estimations represent standard procedure. Blood loss was also measured using the alkaline-hematin method. Results from 29 women delivered by caesarean section (s) and 26 women delivered vaginally (v) were analysed. Women delivered by caesarean section were older, 34 versus 30 years ( $p=0.001$ ), and gestational age was shorter, 270 versus 281 days ( $p<0.0001$ ). As expected, the gestational age was skewed in women delivered by caesarean section as opposed to those delivered vaginally. Parity did not differ: there were 12 primiparae out of 29 (s) vs. 17 out of 26 (v).

Overall visual estimation resulted in an overestimation of blood loss in our study. In women delivered by caesarean section, calculated blood loss correlated better with the estimate than in women delivered by vaginal delivery, where there was no correlation. In the first case blood loss was estimated by anaesthetist nurses, and in the latter by midwives. Anaesthetist nurses, being used to various surgical procedures, may be more precise in their estimation, while midwives may be biased, expecting the blood loss to vary less in normal deliveries.

**Status:** One article in manuscript.

## Personality and mode of delivery

*Ingela Wiklund, Christina Larsson, Gunnar Edman, Ellika Andolf*

In order to study if/how personality influences mode of delivery, three groups of primiparas (n=462) completed the self-report inventory Karolinska Scales of Personality in gestational week 36–38 in pregnancy and nine months after birth. The three groups examined were:

1. Women planning a vaginal delivery (control group n=252)
2. Women requesting an elective caesarean section (case group-maternal request n=92)
3. Women with infants in breech position and where an elective caesarean section was planned (case group medical indication n=19).

Results from data collected before delivery showed that women in the three groups differed significantly in age: women requesting an elective caesarean section were older compared with the other two groups ( $p<0.0001$ ). They were also to a greater extent planning to have only one child ( $p<0.0005$ ). Analyses of variance showed that the sub-scales of Monotony Avoidance differed significantly between the three groups, where women in the vaginal delivery group showed higher scores than the two other groups, 56.4 vs. 51.1 in the “maternal request” group, and 53.7 in the medical indication group ( $p<0.0001$ ). Socialisation (relations between the respondent and her parents and other significant persons) showed the same trend, where women in the vaginal group, who were thus recommended elective caesarean section on medical indication, scored higher, 53.5 respectively 53.7, than women who requested caesarean section 50.5 ( $p<0.017$ ). The three groups differed in the scale measuring “Inhibition of Aggression”, where women who planned a vaginal birth scored higher (47.7) than women with medical indication for caesarean section (45.5) and those with caesarean section on maternal request (44.7) ( $p<0.021$ ).

**Status:** One manuscript and another being planned.

## Women’s involvement in decision-making regarding augmentation of labour

*Sabine Blix-Lindström, Eva Johansson and Kyllike Christensson*

The Swedish Health and Medical Services state that care providers must give clients adequate information and opportunities to be involved in decision-making regarding all kinds of interventions. This project focuses on women’s participation in decision-making in relation to augmentation of labour. Twenty newly delivered women who had received oxytocin infusion were interviewed about their experiences related to information given and participation in decision-making. Women were not necessar-

ily interested in being involved in the decision about augmentation of labour. Support and guidance, e.g. “being seen”, was more important.

Focus group discussions with midwives revealed that all midwives were aware of the law about the rights of patients to participate in decision-making. However, they sometimes circumvented the local guidelines and stated that they knew how to inform the obstetricians in order to get the desired prescription. The midwives also knew how to manipulate the women in labour and get them to accept a proposed intervention. The fact that they were able to handle influential factors had an impact on midwives’ satisfaction with the decisions made, as well as on their professional role.

**Funding:** The Centre for Caring Sciences (CfV) at Karolinska Institutet.

**Status:** One published and one submitted article.

## Postpartum “blues”, depressive symptoms and bonding

*Maigun Edhborg, Wendela Lundh, Malin Friberg, Ann-Sofi Matthiesen, Ann-Marie Widström*

One aim of the study was to investigate associations between maternal “blues” and bonding during the first week postpartum, and depressive symptoms and bonding at two months postpartum in both new mothers and fathers. Also, comparisons of different measures of “blues” symptoms were made in order to identify women at risk of developing depressive symptoms postnatally. A second aim was to describe how women with depressive symptoms at 2–3 months postpartum experienced the first months with their child. A total of 465 mothers and 429 fathers were approached the day after the delivery and asked to fill in questionnaires each day during the first week. Two months postpartum, follow-up questionnaires were sent. After the first week, 223 (48%) mothers and 164 (38%) fathers, and at two months 280 (60%) mothers and 235 (55%) fathers, returned the questionnaires. In all, 106 couples returned all questionnaires on both occasions. An extended dropout analysis was conducted. Twenty-two women with signs of depression were interviewed about their experiences during the first months and these were analysed using grounded theory approach.

Although differences were found regarding parents’ rated levels of “blues”, depressive symptoms and postpartum bonding, many similarities between mothers and fathers were found. “Blues”, bonding and depressive symptoms were significantly related to EPDS in both parents. In mothers, a history of depressive symptoms and emergency caesarean section was also associated with depressive symptoms at two months after birth. Mothers with depressive symptoms at two months experienced the first months of motherhood as a struggle, in relation to themselves, as well as to their child and their partner. They expressed feelings of loss of identity, felt overwhelmed by the responsibility for the child, and expressed feelings of isolation, worries and breastfeeding

problems. Most mothers were reluctant to speak about their feelings and they assigned their depressed mood to personal weakness rather than illness. In relationships to their partner the mothers struggled to maintain some form of equality in the new situation and to get him involved in childcare.

**Funding:** The Centre for Caring Sciences (CfV) at Karolinska Institutet; the General Maternity Hospital Foundation; research foundations at Karolinska Institutet.

**Status:** Two articles published. Ongoing analysis of different measures of “blues”.

## **Sense of coherence and post-traumatic stress after an emergency caesarean section**

*Vibeke Tham Montén, Kyllike Christensson and Elsa-Lena Ryding*

This prospective study aims at exploring women’s experiences of care and support during and after an emergency caesarean section, and at studying possible predictors of symptoms of post-traumatic stress in relation to childbirth.

**Participants:** 127 women consecutively delivered by emergency caesarean section at Karolinska University Hospital, Solna. **Methods:** The Sense of Coherence scale was administered at two days postpartum, and the Impact of Event scale at 3 months later. The women were also interviewed (in a semi-structured way) about their experiences of care and support at 6–7 months postpartum, and content analysis is used in evaluation.

**Results:** Both obstetric and demographic variables and the individual’s sense of coherence influence the degree of post-traumatic stress symptoms. A weak sense of coherence in the new mother and imminent asphyxia as an indication for the caesarean were the strongest predictors of post-traumatic stress.

The women’s experiences of support from caregivers and family are important variables in relation to their well-being and to working through the unexpected caesarean.

**Status:** Ongoing doctoral project with two articles in progress.

## **Mother-infant separation after birth – a family perspective**

*Kerstin Erlandsson, Kyllike Christensson and Ingegerd Fagerberg*

The overall aim of the study is to obtain a coherent understanding, from a family-oriented perspective, of the phenomenon “separation of mother–infant dyad after birth”. The study focuses on situations where sick infants have to be transferred to an intensive care unit, and situations where the mother and her healthy infant are separated after a caesarean section. In the latter situation the behaviour of the father, as the

prime caregiver, is investigated. The studies have both a qualitative and a quantitative approach.

**Status:** Ongoing doctoral project with one published and two submitted articles.

## Breastfeeding and quality of care

*Anette Ekström, Anne-Sofie Matthiesen, Ann-Marie Widström, Eva Nissen*

The overall objectives of this project were to map factors of importance for breastfeeding, such as maternal background factors, maternal perception of breastfeeding support, confidence, caring routines, breastfeeding attitudes of health care professionals; and to investigate whether a training intervention within the care team of the antenatal (ANC) and child health centres (CHC) would improve maternal perception of support and strengthen maternal feelings for the baby.

**Material and method:** A questionnaire was sent to mothers when their babies were 9–12 months old (n=540). The questionnaire covered questions regarding maternal background, caring routines, perception of support and duration of breastfeeding (I–II). An attitudinal instrument was then developed to measure breastfeeding attitudes in health care professionals (n=168). Four attitude dimensions were identified by factor analysis (III). Ten municipalities in a county of south-west Sweden were paired and randomised to intervention or control (IV). Thus, all midwives and postnatal nurses working at the ANC or CHC in a randomised municipality were asked to participate in the study (n=81). Health professionals in the intervention group participated in process-oriented training in breastfeeding counselling, including planned continuity in family education and development of a common breastfeeding policy within the caring team. Changes in attitude were measured by the instrument developed in study III. For study V, mothers were recruited from the maternity unit and were allocated to intervention- or control group according to the randomisation of municipalities in study IV (n=565). Questionnaires were sent out at three days, three months and nine months postpartum, to investigate how the care and counselling skills acquired by the health care professionals would be reflected in maternal perception of breastfeeding support, and in maternal feelings for and relation to the baby.

**Results:** Early initiation of suckling, late discharge from hospital (more than 72 hours) and perceived good support contributed positively to the duration of exclusive breastfeeding. Supplementation in the first days after birth for other than medical reasons shortened the duration of breastfeeding. For primiparas, the partner's presence after childbirth contributed positively to the duration of exclusive breastfeeding. Multiparas who were aware of their mother's breastfeeding history had a longer breastfeeding period than those who did not know of their mother's breastfeeding history. Mothers were more satisfied with the breastfeeding information they had received at the

maternity unit than the breastfeeding information they got from the ANC and CHC (I–II). This induced the idea to develop an attitude instrument and start a training intervention for the care team at ANC and CHC. The attitudinal dimensions identified by the factor analysis were: the regulating factor comprising statements scheduling breastfeeding; the facilitating factor comprising statements showing confidence in the ability of the mother–infant dyad to breastfeed on their own; the disempowering factor comprising statements that objectified the woman and ascribed her no ability to breastfeed without guidance from the health care professional; and the breastfeeding antipathy factor comprising statements that showed unwillingness and failing knowledge about breastfeeding (III). After training, the health care professionals became less regulating and more facilitating (IV). Family classes provided the intervention mothers with better breastfeeding information, and gave them more knowledge about their social rights, the needs of the baby and a stronger social network than the control mothers (V). The postnatal nurse gave better overall support, was a better listener, showed more understanding and provided the mother with better information about breastfeeding and the needs of the baby. Mothers in the intervention group reported that they interacted more with their baby. They also had more positive views on their baby and felt more confident and close with the baby than mothers in the control groups (V).

**Conclusion:** This study showed that it is important to adopt caring routines that will facilitate breastfeeding. The health care professional needs to find out the background of the mother to be able to provide her with adequate breastfeeding counselling. Caring routines should include early suckling. In the first week after birth, breast-milk supplements should only be given to the baby on medical grounds. This study showed that process-oriented training in breastfeeding counselling alters attitudes of health care professionals in a positive way. The trained health care professionals organised continuity of family classes, developed a common breastfeeding policy and were more supportive in their encounters with the mothers. These behaviours strengthened the mother's feelings for her baby and brought about a richer interaction with her baby. A model to provide continuity of family classes, conducted by trained antenatal midwives and postnatal nurses should thus be practised within the caring team around first-time parents.

**Funding:** The Skaraborg Institute for Research and Development; the School of Life Sciences, University College of Skövde; the Primary Care Unit in Skaraborg; the Science Committee, Central Hospital, Skövde; the Board of Research for Health and Caring Sciences; the Swedish Research Council.

**Status:** Two articles published, two in press and one manuscript.

## **Night rooming-in: who decides? An example of staff influence on mothers' attitudes**

*Kristin Svensson, Ann-Sofi Matthiesen, Ann-Marie Widström*

In 1989 the World Health Organisation and UNICEF introduced the “Ten Steps” for successful breastfeeding. One step suggests that a mother and her newborn baby should remain together day and night during the hospital stay. The purpose of this study was to investigate, first, whether or not mothers in our hospital roomed in with their babies at night; second, the attitudes of mothers toward night rooming-in and their feelings of closeness to their babies; and third, how mothers perceived hospital staff attitudes towards night rooming-in. All mothers (n=132) of Nordic ancestry and with good knowledge of the Swedish language, who were admitted to the maternity wards during a two-week period at Karolinska University Hospital, Stockholm, answered a questionnaire on demographic background data and their current night rooming-in practices, including an attitude scale. Most study mothers were positive towards night rooming-in, regardless of whether they had roomed in with their babies at night (93% positive) or not (73% positive). Mothers who had not roomed in with their babies were more likely to perceive that the staff believed their babies should stay in the nursery, compared with those mothers who practised night rooming-in ( $z = -2.733, p = 0.006$ ). Mothers who did not room in with their babies rated closeness to their babies as less important than those mothers who roomed in with their babies ( $z = -3.780, p = 0.0002$ ); they were also more worried about their own and their babies' sleep ( $z = -2.321, p = 0.02$ ) and disturbing noises ( $z = -3.487, p = 0.0005$ ). Mothers who left their babies in the nursery at night more often perceived that the staff believed their babies should stay in the nursery, rating closeness between mother and infant lower. Hence, negative staff attitudes toward night rooming-in may implicitly suggest to mothers that closeness between mothers and babies is not important.

**Status:** One article published.

## **“Hands-on” approach during breastfeeding support in nicos: Swedish mothers' experiences**

*Lena Weimers, Kristin Svensson, Lars Navér, Louise Dumas, Vivian Wahlberg*

Assisting mothers to breastfeed is not easy when the baby experiences difficulties. In a neonatal intensive care unit (NICU) nurses often use hands-on-breast approach to help the mothers. Little is known on how mothers feel about this unusual body touching. To gain more knowledge from mothers who live through this experience, this hands-on practice was studied in a NICU in Sweden. In-depth interviews were

conducted with twelve mothers of preterm or sick-term infants. This study relates to the period of initiation of breastfeeding. A qualitative approach was used, based on a combination of Gustafsson's, Orem's, and Aarts Marte Meo's models.

**Status:** One article in manuscript.

## **Infant development and maternal well-being. A follow-up of the KUB study - the KUBU study**

*Alina Rodriguez, Gunilla Bohlin, Ulla Waldenström*

The KUBU project is a follow-up of the KUB study (described earlier in this report) aiming at tracking child development and health, as well as maternal mental and physical health, over time. To pursue this goal we first conducted two follow-up studies of subsamples from KUB yielding detailed information. The first follow-up recruited mothers living in the region of Svealand and was conducted when the children were 2.5 years old. Mothers completed self-report questionnaires concerning psychosocial factors and child behaviour and health. From this pool of mothers, we later recruited participants to a videotaped home observation study when the children were 4 years old. Over 150 families participated. This study provides detailed data concerning child behavioural and emotional development via structured tasks designed to measure executive function and regulation. Further, we collected reports on child development from both mothers and primary day-care providers. Participation from fathers was solicited for the first time in this project. Fathers provided data concerning behavioural and psychosocial factors. To further pursue our main goal of studying the determinants of child and maternal well-being and health over time, we are currently gathering data for a third follow-up, consisting of the full KUB sample. All mothers who participated in the original KUB study are invited to complete a postal questionnaire about 5 years after the birth. Here again, reports from teachers and fathers are also solicited.

The principal investigators for KUBU are from the Department of Psychology, Uppsala University. We work from the perspective that not only are the first years of children's lives the building blocks of their future, but also that the prenatal period is an important determinant. We take an integrated approach to early child development that combines both environmental and biological factors. Areas of concentration include studying antecedents of child behaviour problems in relation to maternal emotional well-being.

**Funding:** The Swedish Research Council.

**Status:** Ongoing

## Being a teenage mother

*Elisabeth Hertfelt Wahn, Ann-Marie Widström, Irene von Post, Beth Maina Ahlberg, Eva Nissen*

The aim of the study is to better understand how teenage mothers perceive social support. The first part of the project aimed at describing teenage mothers' experience of becoming mothers, and midwives' experience of caring for teenage mothers during pregnancy and childbirth. The second part is to investigate the mothers' satisfaction with support in relation to their social background and self-esteem.

**Funding:** The University College of Skövde; the Skaraborg Institute for Research and Development.

**Status:** Data collection completed. One article published and one submitted.

## Teenage parenthood: paternal characteristics and child health outcomes

*Cecilia Ekéus and Kyllike Christensson*

Teenage childbearing and parenthood is a serious public health problem worldwide, as it is associated with poor health of the mother and the child. Recent studies have shown that poor health in this context is more related to socio-economic factors, rather than to medical or physiological ones. Although knowledge about associated factors has increased, very few studies have focused on the partners/fathers of children born to the teenage mothers. We investigated the characteristics of these men and later outcomes related to the children. We found that a significantly larger proportion of fathers of children born to teenage mothers compared with fathers of children born to other mothers had a compromised social situation, including unstable family background, low level of education, illicit drug abuse, earlier sexual debut and involvement in criminal activities. After adjustment for social background factors, the pre-school children of teenage mothers had a 40% increased risk of unintentional injury and double the risk of violent injuries compared with children of older mothers. Although these results are from a Swedish population, they could be discussed in a global perspective, since teenage motherhood is an increasing problem especially in low-income countries.

**Funding:** The National Institute for Public Health; the Centre for Caring Sciences (CfV) at Karolinska Institutet; and the Swedish Victim Compensation and Support Authority.

**Status:** Project completed. One doctoral thesis, including three published articles and one in press.

## Home births in sweden 1992–2005

*Helena Lindgren, Ingegerd Hildingsson, Kyllike Christensson and Ingela Rådestad*

The overall aim of this project is to enhance our knowledge about home births in Sweden by conducting five different studies:

- A qualitative interview study describing parents' assessment of risk in relation to a home birth.
- A survey of the number of planned home births that actually took place in Sweden during the period 1992–2004, the number of transfers during labour and the reasons for transfer.
- The reasons for choosing a home birth and the experience of giving birth at home will be investigated by a questionnaire sent to all women that agree to participate in the study
- A comparison of women who choose a home birth and women who choose a hospital birth, regarding age, education, parity and place of residence.
- Medical complications and interventions during labour will be compared between the study group and a control group including healthy women with a normal pregnancy and an expected normal delivery.

**Funding:** Mälardalen University.

**Status:** Ongoing doctoral project with one published article.

# Evaluations of interventions during pregnancy, childbirth and the neonatal period

## Fetal screening for Down's syndrome

*Susanne Georgsson Öhman, Charlotta Grunewald, Sonja Olin Lauritzen, Sissel Saltvedt, Ulla Waldenström*

The effect of fetal screening for Down's syndrome by means of an ultrasound examination at 12–14 gestational weeks and measurement of fetal nuchal translucency was investigated by a randomised controlled trial. Altogether 2026 women were randomly allocated to the intervention group or to routine scan at 15–20 gws. Questionnaires including the State-Trait Anxiety Inventory, the Cambridge Worry Scale, and the Edinburgh Postnatal Depression Scale were filled in at baseline in early pregnancy, at 24 gws and 2 months after delivery. No statistically significant differences were found between the trial groups regarding women's worries about the health of the baby, general anxiety and depressive symptoms during pregnancy or two months after delivery. Women's worries about something being wrong with the baby in the early ultrasound group and routine group respectively decreased from baseline (39.1% vs. 36.0%) to mid-pregnancy (29.2% vs. 27.8%), and finally to two months after delivery (5.2% vs. 6.6%).

Women's interpretation of risk and the association between an increased risk and maternal emotional well-being was investigated in a sample drawn from the intervention group of the randomised controlled trial. Altogether 796 women provided information for this study. Data were collected by three questionnaires: in early pregnancy, at 24 gws, and two months after birth. Questions were asked about recall of the risk score and perception of the risk. The Cambridge Worry Scale (CWS) and Edinburgh Postnatal Depression Scale (EPDS) measured worry and depressive symptoms respectively. One woman in five (22%) was unaware that the risk score was noted in her case record. A total of 620 women stated they had received a risk score, but only 64 per cent of them recalled it correctly. The actual risk was associated with the perceived risk, but of the 31 women who perceived the risk as high, only 14 were actually at high risk. A high risk score was not associated with worry or depressive symptoms in mid-pregnancy, whereas a woman's own perception of being at high risk had such an association. No statistical differences were found postpartum between maternal emotional well-being and the actual risk or the perceived risk.

Women's experiences of a false positive ultrasound test were investigated by a qualitative study of 24 women who were interviewed within one week after the scan, in mid-pregnancy and two months after the birth. In four cases Down's syndrome was

confirmed and these women made the choice to terminate the pregnancy. The remaining 20 women had a false positive test. For the majority, the risk information caused strong reactions of anxiety and worries about the future. A typical way of coping was to “withhold” the pregnancy, to take “time out” and try to live as if they were not pregnant any longer. Some weeks later, when the women received information from the chromosome analysis that the baby did not have Down’s syndrome, they resumed being pregnant. Six women aged over 35 years who had a risk score lower than their age-related risk were not equally anxious, but were very concerned about the risk of miscarriage associated with the amniocentesis.

**Funding:** The Swedish Foundation for Health Care Sciences and Allergy Research; the Centre for Caring Sciences (CfV) at Karolinska Institutet.

**Status:** One article published, one in press and one submitted.

## **The tuff trial: Evaluation of antenatal childbirth education classes**

*Malin Bergström, Ulla Waldenström*

The aim of this study is to evaluate the current model of antenatal childbirth and parenthood education classes in Sweden (Alternative A) by comparing them with classes where there is a more specific focus on childbirth preparation and pain-coping techniques, such as breathing and relaxation (Alternative B). Forty-eight midwives have been randomly allocated to give either A classes or B classes during a period of at least one year, and 1,000 pregnant (primiparous) women and their partners will be randomly allocated to A or B.

**Funding:** The Swedish Research Council.

**Status:** Recruitment of expectant parents commenced in January 2006.

## **Effects of oxytocin administration and epidural analgesia during labour on the physiological and psychological adaptation to breastfeeding two days postpartum**

*Wibke Jonas, Ingela Wiklund, Eva Nissen, Anna-Berit Ransjö-Arvidson, Kerstin Uvnäs-Moberg*

Synthetic oxytocin has been used in the Swedish labour ward since the 1960s in order to stimulate labour in the case of labour arrest. Stimulation with oxytocin during labour has continuously increased in Sweden. Similarly, the use of epidural analgesia for pain relief during labour has increased. In 2002, 32 per cent of all women giving birth

at the clinic where the present study was conducted received oxytocin for stimulation of labour, and 42 per cent of all primiparae giving birth received an epidural. Whether oxytocin administered during labour shortens the delivery is still a matter of debate, and whether oxytocin given to the mother in connection with labour influences the mother's or the infant's physiology and behaviour needs to be documented. Furthermore, little is known about the effects of epidural analgesia on the physiology and behaviour of the mother and the newborn baby.

The overall aim of this project is to explore whether labour ward interventions such as epidural analgesia, oxytocin administration intravenously during labour and intramuscularly after labour, influence aspects of the mother's and infant's physiology and/or psychology two days postpartum. Included in the study population are Swedish-speaking primiparae with an uncomplicated singleton pregnancy and normal labour. A criterion for inclusion was that the newborn babies had to be born at full term, with an Apgar score of 8 or more at 1 minute postpartum. The mother and her infant should not have been separated after birth, not even for medical examinations. The newborn infants should have been exclusively breastfed and not been given any formula.

The aims of four studies were:

1. To investigate the pattern of skin temperature in newborn babies recorded two days after birth in connection with breastfeeding, and to examine if epidural analgesia and oxytocin infusion during labour influence skin temperature at this point of time.
2. To investigate the pattern of maternal blood pressure in response to breastfeeding two days after birth, and to study maternal blood pressure before and after breastfeeding during a six-month follow-up period
3. To examine the oxytocin release pattern in association with breastfeeding two days postpartum in relation to maternity-ward routines.
4. To confirm the existence of a difference in personality profile between women in the early postpartum period and a group of non-pregnant, non-lactating women of the same age, and to study whether there are differences in the personality profile between mothers who have been exposed to different ward routines.

**Funding:** The Swedish Foundation for Health Care Sciences and Allergy Research; the Swedish Research Council; the Centre for Health Care Sciences at Karolinska Institutet; the Health Care Sciences Postgraduate School at Karolinska Institutet; and Praktikertjänst AB.

**Status:** Two manuscripts submitted, two manuscripts under preparation.

## Effect of extra support during labour and birth on oxytocin release, parent-infant bonding and breastfeeding

*Eva Evaldsson, Kerstin Uvnäs-Moberg, Eva Nissen*

Extra support during labour may reduce the number of interventions and enhance bonding and interaction with the baby. The aim of this study is to investigate the effect of extra support on oxytocin release and the association between measured oxytocin levels/patterns and parent-infant bonding and breastfeeding behaviour. Forty couples will be invited to participate in the study and will be randomised to social support or routine care. During labour and childbirth the women and their partners will be blood-sampled every second hour. The parents will be followed during the first six months after the birth by investigating their self-reported perception of the baby and their bonding to the baby, using well-validated questionnaires. Breastfeeding data will be also collected.

**Funding:** The Skaraborg Institute for Research and Development.

**Status:** The study is being pilot-tested to refine the methodology.

## Safety of birth centre care

### Safety of Birth Centre care: perinatal mortality over a ten-year period

*Karin Gottvall, Charlotta Grunewald, Ulla Waldenström*

The aim of this cohort study was to study perinatal mortality in women booked at an in-hospital birth centre in Stockholm. Altogether 2534 women (3256 pregnancies) were admitted to the birth centre over a period of ten years (1989 – 2000), and the infant outcomes of these women were compared with those of 126,818 women (180,380 pregnancies) who gave birth in standard care during the same period, and who met the same medical inclusion criteria as in the birth centre. Multiple pregnancies were excluded. Data were collected from the Swedish Medical Birth Register. Information on all cases of perinatal death in the birth centre group were retrieved from the medical records. No statistically significant difference in the overall perinatal mortality rate was observed between the birth centre group and the standard care group (OR 1.5; 0.9 – 2.4), but infants of primiparas were at greater risk (OR 2.2; 1.3 – 3.9). Infants of multiparas tended to be at lower risk, but this difference was not statistically significant (OR 0.7; 0.3 – 1.9). These figures were adjusted for maternal age and gestation in multiple regression analyses.

## **Birth Centre care over a ten-year period: infant morbidity during the first month after birth**

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*Karin Gottvall, Birger Winbladh, Sven Cnattingius, Ulla Waldenström*

The aim of the study was to investigate morbidity during the first month after birth in infants of mothers booked for birth centre care during pregnancy. A total of 3,238 live-born babies whose mothers were admitted to an in-hospital birth centre from 1989 and 2000 were compared with 179,502 babies whose mothers were cared for in standard maternity service during the same period, and who met the same medical inclusion criteria as in the birth centre. Multiple pregnancies were excluded. Data were collected from the Swedish Medical Birth Register and the Hospital Discharge Register. Logistic regression analyses were performed to calculate the odds ratio (OR), using 95% confidence intervals.

Compared with infants delivered in standard care, infants in the birth centre group had a higher risk of respiratory problems (OR 1.5; 1.2–1.8), a difference which correlated with less severe respiratory diagnoses. Fractures were less common in the birth centre group (OR 0.4; 95% CI 0.3–0.6) than in the standard care group. It was concluded that birth centre care was not associated with severe infant morbidity and seemed to reduce the risk of birth trauma such as fractures.

**Funding:** The Swedish Foundation for Health Care Sciences and Allergy Research; and the Department of Obstetrics and Gynaecology, Södersjukhuset, Stockholm.

**Status:** Two articles published.

## **Evaluation of a new model of birth care developed from previous experiences of birth centre care**

*Karin Gottvall, Charlotta Grunewald, Hans Pettersson*

A previous study of birth centre care at Södersjukhuset in Stockholm showed a higher degree of maternal satisfaction with care, fewer obstetric interventions, a lower rate of birth trauma such as fractures, but a higher rate of perinatal mortality in first-born babies, compared with standard maternity care. The risk of perinatal mortality in first-born babies was doubled (RR 2.2; 95% CI 1.3–3.9). As a consequence, the birth centre concept was modified and replaced by a new unit, Södra BB, in the same hospital.

The aim of this study is to evaluate the new model of birth care, which aimed to take advantage of the positive outcomes of the birth centre trial and implement changes that would avoid its negative effects in terms of safety and transfers.

A survey of all births that took place from the opening of Södra BB and during the following 1½ years (from the start in 2004 to 2005) will be conducted. Comparisons will be made between women cared for at Södra BB and women in standard maternity care, regarding perinatal mortality and morbidity, medical interventions and mothers' and fathers' experiences of care.

**Status:** Data collection in progress.

## **Parent–infant interaction after elective caesarean section**

*Marianne Velandia, Kerstin Uvnäs-Moberg, Ann-Marie Widström, Eva Nissen*

A total of 43 primiparous women and their spouses were randomised to skin-to-skin contact with the newborn baby during a period of approximately 30 minutes immediately after birth. Fathers who belonged to the skin-to-skin group were instructed that the baby would be handed over to them after a short session of 10 minutes after birth with the mother. The interaction was videotaped and both parents were blood-sampled for oxytocin during the first two hours after birth. The experience of skin-to-skin contact was assessed with different instruments.

**Funding:** The Swedish Foundation for Health Care Sciences and Allergy Research; the Freemason Foundation, Stockholm.

**Status:** Reporting underway.

## **The effect of two methods of pain relief after caesarean section, patient-controlled analgesia (pca) with morphine and transcutaneous electrical nerve stimulation (tens), combined with pca morphine if needed, on mother–infant interaction.**

*Eva Nissen, Annica Gustafsson, Kerstin Uvnäs-Moberg*

The aim of the study was to investigate the effect of patient-controlled analgesia (PCA) with morphine, compared with transcutaneous electrical nerve stimulation (TENS), combined with PCA morphine if needed, on mother–infant interaction. Forty healthy, full-term, multiparous mothers delivered by elective caesarean section with a healthy singleton baby were included. Approximately 12 hours after the caesarean section, women were given either PCA morphine or TENS combined with PCA morphine.

Twenty women were randomised to the PCA group and 20 to the TENS (and PCA if needed) group. Blood samples were taken over the first 24 hours to be analysed for

morphine and metabolites and oxytocin. Approximately 12 hours after treatment had started the mothers were videotaped during a breastfeeding session. The mothers were followed up with questionnaires, asking about bonding and feelings for their baby.

Preliminary findings show that TENS combined with PCA morphine reduces morphine consumption and is as effective for pain relief as PCA morphine after an elective caesarean section. No adverse effects were found on maternal experience of the relation with the baby, as measured with previously used instruments.

**Funding:** The Skaraborg Institute for Research and Development.

**Status:** Two manuscripts in preparation.

## **Tele-medicine – a way of supporting postpartum women after an early discharge**

*Inger Lindberg, Kerstin Öhring and Kyllike Christensson*

Postpartum care has changed dramatically over the last few decades in Sweden, as in many other high-income countries. The major change is a reduction of length of hospital stay from one week to two days or even less. This reduction in length of hospital stay might be of specific concern for women living in sparsely populated areas such as, for example, the northern part of Sweden where small maternity hospitals have been closed down. Information and communication technology, “telemedicine”, could be an alternative or a complement to existing postpartum care for these women/families. We are now investigating new parents’ and midwives’ experiences of using information and communication technology, such as videoconference equipment, as a means for midwifery support during the first week after hospital discharge.

**Funding:** Luleå University.

**Status:** Ongoing doctoral project with one published article, one submitted and two in progress.

## **Effects of swaddling on breastfeeding and the newborn infant’s behaviour and health**

*Ann-Marie Widström, Ksenia Bystrova, Anna-Berit Ransjö-Arvidson, Barbara Welles-Nyström, Ann-Sophie Mattiese, Kerstin Uvnäs-Moberg, Maigun Edhborg, Vendela Lundh, Valentina Ivanova, Igor Vorontsov*

The goal of this international collaboration between the Paediatric State Academy in St Petersburg, Russia and Karolinska Institutet is to investigate the physical, psycholog-

ical and medical effects of diverse ward routines during childbirth on mother–infant behaviour and interaction. The ward routines evaluated include swaddling, skin-to-skin care, rooming-in, and traditional care in the nursery with infants separated from their mothers at birth. The data collected includes: assessment of Russian infants, attention to cultural variance in ward and maternal care, ethnographic description of the childbirth environment, assessment of the women’s psychological transition to motherhood, and development of ethically sensitive and culturally informed research instruments.

**Funding:** The East European Committee; Sida; the Freemason Foundation, Stockholm; Karolinska Institutet.

**Status:** Data collection completed. One article published, two submitted and two in manuscript. Two under analyses.

### **Skin-to-skin contact may reduce negative consequences of “the stress of being born”: a study on temperature in newborn infants subjected to different ward routines in St. Petersburg**

*Ksenia Bystrova, Ann-Marie Widström, Ann-Sofi Matthiesen, Anna-Berit Ransjö-Arvidson, Barbara Welles-Nyström, Christina Wassberg, Igor Vorontsov, Kerstin Uvnäs-Moberg*

The aim was to evaluate how different delivery-ward routines influence temperature in newborn infants. A total of 176 newborn mother–infant pairs were included in a randomised study. The babies were kept skin-to-skin on the mother’s chest (Skin-to-skin group), held in their mother’s arms, being either swaddled or clothed (Mother’s arms group), or kept in a cot in the nursery, being either swaddled or clothed (Nursery group). Temperature was measured in the axilla, on the thigh, back and foot at 15-min intervals at 30 to 120 min after birth. During this time period the axilla, back and thigh temperatures rose significantly in all the treatment groups. The foot temperature displayed a significant fall in the babies in the Nursery group and this decrease was greatest in the swaddled babies. In contrast, foot temperature rose in the babies in the Mother’s arms group, and in particular in babies in the Skin-to-skin group. Foot temperature remained high in the Skin-to-skin group, whereas the low temperature observed in the Nursery group gradually increased and two days after birth the difference was no longer significant. The results show that delivery-ward routines influence skin temperature in infants in the postnatal period. Allowing mother and baby the ward routine of skin-to-skin contact after birth may be a “natural way” of reversing stress-related effects on circulation.

**Status:** One article published.

## Influence of early suckling and rooming-in, maternal experience of “blues” and breast engorgement, on milk production four days after birth. Differences in primi- and multiparous women

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*Ksenia Bystrova, Ann-Marie Widström, Ann-Sofi Matthiesen,  
Anna-Berit Ransjö-Arvidson, Barbara Welles-Nyström, Igor Vorontsov,  
Kerstin Uvnäs-Moberg*

The aim of the study was to investigate how parity, labour- and maternity-ward routines influence milk production four days after birth and the duration of “nearly exclusive” breastfeeding, and to relate breastfeeding frequency, mother’s experience of breast engorgement and “blues” to these breastfeeding outcomes.

A total of 176 mother–infant pairs were randomised immediately after birth into four main treatment groups, each including subgroups of infants swaddled or dressed. The randomisation was blocked for time and parity.

1. Skin-to-skin group, with babies swaddled 2 hours after birth (gr. 1) or dressed (gr. 2).
2. Mother’s arms group with babies swaddled (gr. 3), or dressed (gr. 4).

The babies from groups 1 and 2 had the choice of early suckling or not during 2 hours after birth, and the occurrence of early suckling was recorded. After 2 hours, babies were brought to the maternity ward for rooming-in with their mothers.

3. Nursery group, swaddled (gr. 5) or dressed (gr. 6). These babies were kept in a cot in the labour ward for 2 hours and were then transferred to the maternity ward nursery.
4. Reunion group, swaddled (gr. 7) or dressed (gr. 8). These babies were kept for 2 hours after birth in the nursery of the labour ward and then transferred to the maternity ward for rooming-in.

Other data recorded included the number of breastfeeds, the mother’s experience of the intensity of breast engorgement and feeling of being low/”blue”. This was recorded on day 1 to 3 after birth, using a Visual Analogue Scale, and the amount of milk ingested by the baby was recorded on day 4 after birth. In addition, the duration of “nearly exclusive” breastfeeding was noted.

**Status:** Manuscript submitted for publication.

## The effect of maternity home routines on breastfeeding and infant weight loss with special reference to swaddling

*Ksenia Bystrova, Ann-Sofi Matthiesen, Ann-Marie Widström, Anna-Berit Ransjö-Arvidson, Barbara Welles-Nyström, Igor Vorontsov, Kerstin Uvnäs-Moberg*

Swaddling of the newborn baby immediately after birth is common practice in many countries, but little is known of the effect of this routine on breastfeeding outcome.

The aim of the study was to investigate how labour- and maternity-ward routines, including swaddling, influence short-term outcome of breastfeeding and the recovery of infant weight loss after birth.

In a randomised trial, 176 mother–infant dyads were studied regarding the effect of being with the mother versus separation in the labour ward, and the routine of rooming-in versus nursery care in the maternity ward. Effects of swaddling versus being clothed were also compared with respect to breastfeeding outcome. Breastfeeding parameters (number of breastfeeds, time for breastfeeding, amount of breast milk or supplements ingested) were documented on day 4 after birth.

**Status:** Manuscript submitted for publication.

## Induction of anti-secretory factor in human milk may prevent mastitis

*Kristin Svensson, Stefan Lang, Ivar Lönnroth, Ann-Marie Widström, Lars Åke Hanson*

The aim of the study was to try to induce anti-secretory factor (AF) in human milk and possibly prevent mastitis. Forty mothers who had normal deliveries and healthy full-term infants were randomly divided into two groups, 3–7 days postpartum. The experimental group received a food inducing AF. The control group received the same type of food, without AF-inducing properties. Milk was tested for AF after the mothers had eaten the cereals for 4–5 wk. AF was determined by intravenous injection of milk samples into rats measuring their capacity to prevent secretion into a gut loop of the rat injected with cholera toxin. The median levels of AF differed between the experimental (n=12) and control groups (n=16): 1.1 (0.7–1.25) units vs 0.1 (0.0–0.25) units,  $Z = -4.492$ ,  $p < 0.0001$  (11 mothers dropped out and one milk sample is missing from one of the control mothers). The frequency of mastitis in the experimental compared with the control group was reduced ( $p = 0.0086$ , permutation test). The median AF levels in mothers with or without mastitis differed: 0.0 (0.0–0.1) vs 0.5 (0.2–1.1),  $Z = -2.399$ ,  $p = 0.017$ . We suggest that a specially treated cereal induces AF in human milk and protects against clinically manifested mastitis.

**Status:** One article published.

## **The newborn individualised developmental care and assessment programme (NIDCAP) – Attitudes of mothers of preterm infants. A randomised study**

*Agneta Kleberg, Lena Hellström-Westas, Ann-Marie Widström*

Family-centred care of premature infants according to the Newborn Individualised Developmental Care and Assessment Programme (NIDCAP) has been reported in follow-up studies to influence parents positively, e.g. in terms of communication with the infant and family function.

The present study examined the influence of this programme on the perceptions of mothers of premature infants regarding neonatal care, caregivers, the child, their feelings of closeness to the child and their role as a mother. Infants born at a gestational age of < 32 weeks at Karolinska University Hospital between September 1994 and April 1997 were assigned randomly to receive either NIDCAP (n=12) or conventional (n=13) care, forming two comparable groups with respect to females/males ratio, birth weight, head circumference at birth, gestational age and Clinical Risk Index for Babies. Behavioural observations, with care plans to adjust the care and environment to the current developmental stage of the infant and to support parent participation, were performed weekly for the intervention group. An attitude scale, designed to evaluate the mothers' perceptions during their hospital stay, was validated and filled in by ten mothers in each group when their infants were 36 weeks post-menstrual age (PMA).

**Funding:** The Freemason Foundation's Children's Hospital, Skåne region.

**Status:** Manuscript submitted for publication.

## **Nutritional methods and their effects on very low birth weight infants' physiology and behaviour**

*Ann Dsilna, Lars Alfredsson, Mats Blennow, Hugo Lagercrantz, Kyllike Christensson*

There is consensus among nutritionists and neonatologists that enteral feeding with the mother's breast milk should be given as soon as possible to infants with very low birth weight (VLBW). However, there is no consensus about how soon, or how the milk should be administered. Today, intermittent feeding every 3 hours is the most common practice, but we do not know whether this schedule, which was developed for low birth weight infants is also the most optimal for the VLBW infant. In a randomised control trial, we compared three feeding methods for VLBW infants: continuous feeding with a nasogastric tube remaining in place (index group), intermittent feeding with a nasogastric tube remaining in place (control group I) and intermittent feeding with an intermittently inserted oral tube (control group II). Several outcomes are studied, such as behaviour, physiological outcomes, caring aspect and economy.

**Funding:** The Swedish Foundation for Caring Sciences and Allergy Research; the Centre for Caring Sciences (CfV) at Karolinska Institutet.

**Status:** Ongoing doctoral project with one published article.

## Sexual and reproductive health in the context of high- and middle-income countries

### Young women's and men's views about fertility and sexuality

*Malin Söderberg, Kyllike Christensson and Pia Olsson*

With a phenomenological hermeneutic research approach we are investigating how young women and men experience and imagine their bodies, and how these experiences and thoughts influence their perceptions about fertility and sexual life.

**Funding:** Mälardalen University.

**Status:** Ongoing doctoral project.

### Teenage abortion

*Brittmari Halldén, Pia Olsson, Kyllike Christensson*

About one in four pregnancies in Sweden end up in an abortion, and a high proportion of these are teenage pregnancies. Several studies have described the background characteristics and sexual behaviour of these women and their partner in order to find new ways of preventing unintended pregnancies. However, there is a shortage of studies focusing on the understanding of these young peoples' lived experiences – the context in which they live and how they experience their situation as being pregnant, or having a girlfriend who is pregnant, and their reasoning when making the decision to terminate the pregnancy. Such knowledge might assist in the development of new programmes for sexual life education and other programmes aiming at preventing unwanted pregnancies.

**Funding:** University College of Borås.

**Status:** Ongoing doctoral project with one published article.

## **Postpartum check-up. What are the needs of new families with regard to counselling on sexuality issues after childbirth?**

*Ann Olsson, Regina Wredling, Anders Björklund, Eva Nissen*

This research programme aims at learning more about thoughts on sexual life after childbirth, using focus group discussions with women and men. Focus groups will also be held with midwives at antenatal clinics in order to find out how midwives counsel postpartum couples.

**Funding:** BB Stockholm; Praktikertjänst AB.

**Status:** One article published.

## **Pregnancy and parenthood after successful in vitro fertilisation**

The overall aim of this project was to study emotional reactions during pregnancy and postpartum, in couples who have achieved a pregnancy following in vitro fertilisation (IVF).

**Funding:** The Swedish Foundation for Health Care Sciences and Allergy Research; Karolinska Institutet; and Organon AB.

**Status:** Data collection completed. Three articles published and one submitted. Ongoing analyses of remaining data. One doctoral thesis based on data from the project.

## **Emotional adaptation following successful in vitro fertilisation**

*Anna Hjelmstedt, Ann-Marie Widström, Håkan Wråmsby, Aila Collins*

The objective of the study was to assess the emotional impact of infertility after successful IVF and to compare parents who had undergone IVF (IVF parents) and parents who had not undergone IVF (non-IVF patients) with regard to parental stress and the marital relationship during transition to parenthood. Qualitative and longitudinal quantitative assessments were made. Fifty-five IVF mothers, 53 IVF fathers, 40 non-IVF mothers and 36 non-IVF fathers were recruited from university IVF clinics and antenatal clinics in Stockholm. IVF parents were interviewed and all subjects completed self-rating scales in early pregnancy and at two and six months postpartum. Main outcome measures were perception of infertility, parental stress and the marital relationship.

Negative feelings related to infertility were not easily overcome among the IVF parents. Their levels of stress related to parenthood were similar to those of non-IVF parents,

and both groups reported decreased satisfaction with their marital relationships during the transition to parenthood. It was concluded that the inability to conceive naturally continues to affect the current lives of a proportion of IVF parents. The results suggest that IVF parents may benefit from counselling with regard to the potential long-term impacts of infertility, disclosure issues, and decisions regarding future children. However, levels of parental stress and patterns of partner satisfaction are similar to those of parents with children conceived “naturally”.

**Status:** One article published.

### **Psychological correlates of prenatal attachment among women who conceived after IVF and women who conceived naturally**

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*Anna Hjelmstedt, Ann-Marie Widström, Aila Collins*

It has been pointed out that long-awaited pregnancies, such as those following IVF are emotionally vulnerable. Also, higher pregnancy-related distress has been found among women who have become pregnant as a result of IVF. The aim of the study was to compare prenatal attachment among IVF mothers and controls (women who have conceived “naturally”) and to study relationships between prenatal attachment and psychosocial variables. Fifty-six IVF women from IVF clinics and 41 controls from antenatal clinics in Stockholm were assessed in gestational weeks 26 and 36. They completed self-rating scales measuring prenatal attachment, personality, marital relationship, anxiety and depression.

There was an increase in prenatal attachment as the pregnancy progressed among both groups. Prenatal attachment rated in gestational week 26 was significantly associated with prenatal attachment in gestational week 36. Multiple regression analyses showed that, in gestational week 26, prenatal attachment was explained by satisfaction with partner relationship, whereas in gestational week 36, the factors contributing to high prenatal attachment were low scores of the personality trait detachment, low ambivalence and younger age. The way in which women had become pregnant was unrelated to prenatal attachment at either of the assessment time points. It was concluded that IVF mothers are attached to their unborn children to the same extent as other mothers. Prenatal attachment increases during pregnancy. At the same time, however, individual scores on prenatal attachment seem to be relatively stable. Contributors to prenatal attachment are marital satisfaction, age, ambivalence and personality dimensions. In clinical work, it is important to pay closer attention to the prenatal attachment of expectant mothers.

**Status:** One article submitted.

### **Levels of oxytocin during pregnancy and postpartum, among couples who have conceived as a result of IVF and couples who have conceived “naturally”**

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*Anna Hjelmstedt, Kerstin Uvnäs-Moberg, Mikael Ejdebäck*

**Status:** Ongoing analyses of levels of oxytocin.

### **Psychological correlates of postnatal attachment among women who conceived as a result of IVF and women who conceived “naturally”**

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*Anna Hjelmstedt, Ann-Marie Widström, Cristina Westerberg, Joanna Thingström-Paulsson*

**Status:** Ongoing analyses of self-rating scales and video recordings of breastfeeding sessions.

### **Prenatal and postnatal attachment among IVF fathers and non-IVF fathers**

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*Anna Hjelmstedt, Aila Collins, Ann-Marie Widström*

**Status:** Ongoing analyses of self-rating scales and interviews.

### **Birth weight changes, morbidity and social interventions among first- and second-generation immigrant women and their children in Sweden, 1971–2002**

*Eva Robertson, Anders Hjern, Gunilla Ringbäck-Weitof, Bo Vinnerljung, Ulf Högberg*

The overall aim of the project was to analyse birth weight changes, morbidity and social care interventions and trends among first- and second-generation immigrant women and their children in Sweden during the period 1971–2002.

The aim of the first study is to analyse whether subgroups of foreign-born and second-generation women aged 20–49, during the period 1986–2000, have a higher risk of certain diagnoses than Swedish-born women.

The second study aims at investigating differences/changes of mean birth weight among babies of first- and second-generation immigrant women in Sweden during the period 1978–2002, and if these differences/changes remain after adjusting for gender, gestational age, parity, maternal age, maternal height, maternal weight and smoking.

The third study investigates whether subgroups of foreign-born and second-generation women aged 20–49 have a higher risk of social care interventions concerning their children and adolescents during the period 1971–2002, as compared with native-born women whose parents were both born in Sweden.

**Funding:** The Swedish Research Council.

**Status:** Linking of national registers. Ongoing analyses.

## **Foreign-born women's reflections about factors that influence their health in childbearing years**

*Eva Robertson, Lorena Binfa, Anna-Berit Ransjö-Arvidson*

The overall aim of this study is to deepen our understanding of foreign-born women's perceptions regarding factors that influence their own and their children's health.

Data will be collected by using focus groups including women from different countries/regions of birth. Knowledge gained from our empirical findings and the focus groups will then be used in individual interviews, in order to further capture women's reflections about and perception of factors that influence their own and their children's health. These are matters which they may be unwilling to discuss in a group setting, or for which a group provides insufficient time.

**Funding:** The Centre for Caring Sciences (CfV) at Karolinska Institutet.

**Status:** Commences in 2006.

## **The maternity ward as a meeting place for science and culture: Different stakeholders' perspectives**

The following studies have their origin in results from the multidisciplinary project "Behind the gender mask: Female genital mutilation and the shaping of womanhood among immigrants from Eastern Africa" (principal investigator Beth Maina Ahlberg). Circumcised women in the study indicated that the care they received during pregnancy and delivery in Sweden was not optimal. The women implied that the staff did not have sufficient skill to care for circumcised women, that the staffs' attitudes at times are negative, and that there are language and communication problems. To follow up the information from the women, two sub-studies were planned to investigate the perspectives of midwives and obstetricians.

Female circumcision/female genital cutting (FC/FGC) involves removal of the genital organs ranging from the removal of the clitoral prepuce to excision of the clitoris,

the labia minora and all or part of the labia majora. In the latter procedure, the two remaining sides of the vulva are sewn together leaving only a small opening for the passage of urine and menstrual blood, the procedure is known as infibulation. FGC predates the advent of both Christianity and Islam and, being such an ancient custom, it is considered a norm in areas where it is practised, predominantly in the Horn of Africa. Globally approximately 100–140 million women have been subjected to FGC, and the tradition continues in spite of efforts to stop it. The age at which it is done varies from society to society but ranges from a few weeks of age to puberty.

In Sweden there are a total of 20,000 women from FGC-practising countries, mainly from Somalia and Ethiopia. These are women of different ages who might come into contact with the health care system for various reasons, one being pregnancy and childbirth. This can place special demands on health care providers. For example, to enable an infibulated primigravida to give birth, an anterior episiotomy often has to be performed to expose the vaginal opening to allow the birth of the baby. In 1982 a law was passed in Sweden prohibiting FGC. This law also indirectly prohibits re-infibulation, i.e. re-suturing the anterior episiotomy if this is performed at the birth.

**Funding:** The Swedish Foundation for Health Care Sciences and Allergy Research; the Swedish Council for Research in the Humanities and Social Sciences (HSFR); the Nordic School of Public Health; the Swedish Research Council; the Board of Research for Health and Caring Sciences; the Centre for Caring Sciences (CfV) at Karolinska Institutet; and the Summer Research Programme at Karolinska Institutet.

### **A study of Swedish midwives' encounters with infibulated African women in Sweden**

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*Catarina Widmark, Carol Tishelman, Beth Maina Ahlberg*

The aim of the study was to investigate Swedish midwives' perceptions and attitudes towards infibulation and infibulated women, midwives' experiences of providing care for them and the training the midwives describe having received to enable them to care for and deliver infibulated women.

A multi-stage sampling procedure was used. Open-ended questionnaires were distributed to midwives in labour wards with the purpose of identifying midwives to contact for interviews and focus group discussions. Twenty-six midwives from three labour wards and two antenatal clinics situated in two towns in central Sweden participated in eight focus group discussions and three individual interviews.

The findings are presented in three major themes: i) emotions and communicational challenges entailed in the care of infibulated women; ii) knowledge and skills needed for caring; and iii) the midwives' reliance on the Swedish law when dealing with dilemmas they face in their interactions with the women and their families. The

data indicate communication problems on different levels between midwives and the women and their families. There appear to be few or no guidelines in the units on how to provide good care for infibulated women, and little or no cooperation between antenatal care and the maternity wards. The care of infibulated women during pregnancy and childbirth seems to be a marginalised issue in the areas where this study was performed.

**Status:** Data collection completed. One article published, one manuscript in progress.

### **The encounters that rupture the myth: contradictions in midwives' descriptions and explanations of circumcised women immigrants' sexuality**

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*Amy Levál, Catarina Widmark, Carol Tishelman, Beth Maina Ahlberg*

A secondary analysis was performed on data described above. The purpose of the analysis was to analyse how Swedish midwives (n=26) discuss sexuality in circumcised African women patients. In focus groups and interviews, discussions concentrated on care provided to circumcised women, training received for this care, and midwives' perceptions of female circumcision. An analytic expansion was performed for discussions pertaining to sexuality and gender roles. Results from the analysis show the following: i) ethnocentric projections of sexuality; ii) a knowledge paradox regarding circumcision and sexuality; iii) the view of the powerless circumcised women; and iv) the fact that maternity wards function as meeting places between gender and culture, where the encounters with men allow masculine hegemonic norms to be ruptured. We conclude that an increased understanding of cultural epistemology is needed to ensure quality care. The encounters that take place in obstetrical care situations can provide a space where gender and culture as prescribed norms can be questioned.

**Status:** Data collection completed. One article published.

### **Obstetrical care at the intersection of science and culture: A qualitative study of doctors' perspectives on obstetrical care of circumcised women in Sweden**

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*Catarina Widmark, Amy Levál, Carol Tishelman, Beth Maina Ahlberg*

Previous research suggests a lack of preparedness within the Swedish health care system to care for women who have undergone female circumcision.

The analysis is based on interviews conducted with a purposeful sample of 19 doctors. Interview questions focused on areas important to the care of this patient group.

**Status:** Data collection completed. One article submitted.

## **Childbirth experiences in Australia of women born in Turkey, Vietnam and Australia**

*Helen McLachlan, Ulla Waldenström*

Migrant women constitute a growing proportion of the childbearing population in many high-income countries. The aim of this study was to investigate experiences of childbirth, including recollection of pain and use of pain relief, in women born in Vietnam, Turkey and Australia who gave birth in Victoria, Australia. One hundred Vietnamese-born and 100 Turkish-born women were compared with 100 Australian-born women who gave birth in the same metropolitan hospital during the same time period. The women were interviewed between 24 hours after the birth and hospital discharge. Only women who had a normal vaginal birth and gave birth to a healthy baby were included in the study. The results showed that Vietnamese women used less pain relief, reported more pain and described childbirth overall in more negative terms than Australian women, while at the same time reporting less anxiety, more confidence and less panic during labour. Turkish women's responses were more similar to the Australian group, but they were slightly more satisfied with childbirth overall, despite recollecting more pain. They were also more likely to perceive time normally. Turkish women used a similar amount of pharmacological pain relief to the Australian women, but more relaxation and breathing techniques. In conclusion, this study showed that women's responses to childbirth are associated with cultural background. Midwives and other care providers should be particularly sensitive in assessing Vietnamese women's pain during labour.

**Funding:** The Royal Women's Hospital Division of Research and Education; the Australian College of Midwives Incorporated; La Trobe University Faculty of Health Sciences; and the Royal Women's Hospital Foundation, Melbourne.

**Status:** One article published.

## **The international study of parents, children, and schools (ISPCS)**

*Barbara Welles-Nyström, Sara Harkness, Charles Super, Jesus Palacios, Giovanna Axia, Olav Zylicz*

Demographic and social change has influenced family forms and functions in Western societies over past generations, particularly in respect to direct and frequent paternal involvement in the rearing of young children. The major goal of this study was to understand how parents in some Western cultures understand child development. Participating countries were the USA, Australia, Italy, Spain, Holland, Sweden, and Poland. An additional goal was to understand how parents interpreted their own family of origin in respect to normative cultural models of child-rearing practices and values.

The goal for this specific study was to bring attention to culturally dependent paternal behaviours within the sampled populations in respect to patterns of affect and availability exhibited by fathers. Sixty target children comprising 5 cohorts balanced for sex and birth order, aged 6-, 18-, 36- months, 4½ and 7 years, and their parents were solicited from primarily middle-class urban families. Semi-structured, tape-recorded interviews with parents about beliefs and practices related to the child and child-rearing, and parents' perceptions of their own family of origin. Other research methods included: maps of family living space; diaries kept for one week about the child's daily activities; batteries of psychological instruments. Family of origin data was extracted and coded from interviews. The research questions were: How available and involved were your own parents? What was the parenting style of your parents? What would you like to do the same or different from your parents? What are the most common paternal behaviours and practices in each culture, and how have these changed in the most recent generation?

The results showed that families expressed consensus regarding what they would like to change and this included more democratic parenting styles, more tolerance, and more emotional closeness. Increased father involvement in childcare was a goal expressed in all countries. It was concluded that studies of parents' ideas about their families of origin can shed light on parental ethnotheories of the family. Knowledge of diverse cultural models of what makes a good parent and a successful family can help us better understand, not only child development, but also adult, parental and paternal development.

**Funding:** The Humanities and Social Science Research Council (HSFR); the Spencer Foundation, Chicago, USA; the Swedish Research Council.

**Status:** Much of the cross-cultural comparative data from this project (from the USA, Australia, Italy, Spain, Holland, Sweden, and Poland) have been analysed and several articles published. A book is in progress reporting on findings from the larger project.

### **Swedish parents' ideas about the practice of co-sleeping – Part of ISPCS**

*Barbara Welles-Nyström*

The purpose of this study was to examine the Swedish practice of co-sleeping and relate it to the cultural discourse on the gendered family and health. The Swedish study, part of the International Study of Parents, Children and Schools (ISPCS) focuses on some Western parents' ideas about health, child development, child-rearing goals and parental practices. The Swedish study also addressed specific questions regarding parents' theories about the nature, gender and frequency of co-sleeping in Swedish families.

Quantitative and qualitative data were collected with five cohorts of parents and their 60 children who ranged in age from 6 months to 8 years of age. The sample was bal-

anced for sex and birth order. Parents completed batteries of standardised questionnaires and they were interviewed about their beliefs and practices related to child-rearing and child development. A questionnaire about co-sleeping was sent post hoc to research families. The results showed that Swedish children often co-sleep with both of their parents until school age, when more boys than girls stop the practice. This is an important finding, because much of the literature suggests that this practice exists primarily for infants in non-Western cultures who co-sleep with their mothers. Co-sleeping in Sweden is perceived as a normal family activity, which differed from the other societies studied. Thus, the study of practice has important methodological implications. When a family practice is studied, carefully documented, and understood in its many dimensions, it provides a window into the culture in which the practice is embedded, and may explain how gender relates to the practice. For health care professionals who encounter families from diverse cultural backgrounds, this methodological approach illustrates how parenting practices relate to health care issues.

**Funding:** The Humanities and Social Science Research Council (HSFR); the Spencer Foundation, Chicago, USA; the Swedish Research Council.

**Status:** Data collection completed. One article published, one submitted.

## **Lifestyles, stress and social support in Chilean, Swedish and Chilean immigrant middle-aged women during the climacteric and menopause period. A cross-cultural and epidemiological study**

*Lorena Binfa, Juan Enrique Blümel, Anna-Berit Ransjö-Arvidson, Marcello Ferrada-Noli*

During the climacteric period, a woman's health is to a great extent determined by her previous health status, her reproductive history, her lifestyle and environmental factors. Although menopause as a physiological event remains constant, attitudes toward and beliefs about the menopause vary considerably historically, and cross-cultural comparisons demonstrate that reported symptoms can vary significantly among countries and among ethnic groups within countries.

The overall aim in this project is to explore menopausal experience among Chilean women. A specific aim will be to compare this experience among Chilean and Swedish women living in Sweden or Chile to reflect on the cross-cultural perspective. The material consists of samples of Chilean and Swedish middle-aged women. The Chilean sample considers both women with their residence in Chile, and Chilean women immigrants to Sweden. Studies presented in three papers used material obtained from interviews from samples of Chilean women. In a fourth paper a database containing the scores on the Greene Climacteric Scale from a sample of Chilean women has been analysed, and outcomes will be compared with those obtained from samples of Swedish

women and samples of Chilean women immigrants in Sweden. A fifth paper will use qualitative data (from focus groups discussions) obtained from Chilean women living in Chile to be compared with those obtained from Chilean immigrants in Sweden.

**Funding:** The University of Chile; the Health Care Sciences Postgraduate School at Karolinska Institutet.

**Status:** Three papers published, two in manuscript.

## Sexual and reproductive health in the context of low-income countries

### Youth-friendly sexual and reproductive health services in Kenya: from policy to action

*Elisabeth Faxelid, Mercy Wahome, Paul Nyaga Mbatia*

The general aim of this project is to study why policies related to adolescent sexual and reproductive health (SRH) have not been translated into action in Kenya, and to design and evaluate an intervention aiming at improving youth friendliness in relation to SRH. The project is in the planning phase, where data collection tools, intervention design and evaluation methods are being developed.

**Funding:** A planning grant has been received from Sida/SAREC.

**Status:** Ongoing pilot study in Kenya.

### Emergency contraception among young people in Uganda

*Josphat Byamugisha, Florence Mirembe, Elisabeth Faxelid, Kristina Gemzell-Danielsson*

The aim of this project is to describe and analyse factors influencing accessibility, utilisation and acceptability of emergency contraception among young (aged 10–24) people in Uganda. The study uses both qualitative (in-depth interviews, focus group discussions) and quantitative (self-administrated questionnaires) data collection methods. The project has started with an exploratory cross-sectional phase, where qualitative methods are used to understand attitudes, views and experiences in relation to emergency contraception among young people and service providers. Later, a randomised control trial will be conducted in order to determine side effects and acceptability of two different emergency contraceptive methods among young people.

**Funding:** Long-term collaboration between Sida/SAREC and Makerere University, Uganda.

**Status:** Ongoing data collection and analysis. One doctoral student is registered both at Karolinska Institutet and Makerere University for a joint degree. One manuscript submitted.

## Emergency contraception and fertility awareness among university students in Kampala, Uganda

*Josaphat Byamugisha, Florence Mirembe, Elisabeth Faxelid, Kristina Gemzell-Danielsson*

Uganda has a high maternal mortality ratio with unsafe abortions being one of the major causes. Young people are particularly vulnerable to unsafe induced abortion with its sequelae. Emergency contraception (EC) may reduce unsafe abortions if easily accessible and acceptable. The objective is to determine knowledge about, use of and attitudes towards EC among resident and non-resident female first-year university students in Kampala. In this cross-sectional study 379 female students answered a self-administrated questionnaire. The results showed that less than half had heard about EC. The most common sources of information were friends, media and schools. Although 42 per cent were in a steady relationship, only 15 per cent had ever used the contraceptive. The most common methods used were condoms and withdrawal. EC had been used by seven students. Forty-two per cent did not know the time interval within which EC pills can work and one third believed that EC pills would interrupt an ongoing pregnancy. Furthermore, 35 per cent did not know when in the menstrual cycle they were likely to conceive. The majority of the participating students were against over-the-counter availability of EC pills due to fear of misuse.

**Status:** One manuscript submitted.

## Health-seeking behaviour and coping strategies for adolescent mothers in Wakiso district, Uganda

*Lynn Atuyambe, Florence Mirembe, Annika Johansson, Edward Kirumira, Elisabeth Faxelid*

The aim of this project is to explore and analyse information on pregnancy, delivery and early motherhood with regard to health-care-seeking behaviour and coping among adolescents. This is an ethnographic qualitative project that will largely utilise qualitative techniques (key informant interviews, in-depth interviews and narratives) in the first phase. The second phase will be a quantitative comparative survey between adolescent mothers and adult mothers.

**Funding:** Long-term collaboration between Sida/SAREC and Makerere University, Uganda.

**Status:** Ongoing data collection and analysis. One doctoral student is registered both at Karolinska Institutet and Makerere University for a joint degree. One paper in press, one manuscript in draft, and data for two more papers currently being collected.

## **“They make us pregnant but society blames us”: Experiences of adolescents from Wakiso district, Uganda**

*Lynn Atuyambe, Florence Mirembe, Annika Johansson, Edward Kirumira,  
Elisabeth Faxelid*

In Uganda, morbidity and mortality among adolescent mothers and their children are high. Social factors behind this problem need to be better understood. The objective of this study is to explore problems that pregnant adolescents face, in order to design appropriate policies and interventions. This descriptive study utilised focus group discussions (FGDs) and key informant interviews for data collection. The study population comprised pregnant adolescents, adolescent mothers, opinion leaders, those in charge of health units, and traditional birth attendants. The results show that pregnant adolescents face domestic physical violence. The adolescents were also psychologically violated by parents, partners, and the community within which they lived. Pregnant adolescents were treated inhumanely and had inadequate food to eat. They experienced stigmatisation and as a result some had carried out abortions. In the key informant interviews as well as in the FGDs it was revealed that health workers were rude and unsympathetic to pregnant adolescents. This contributed to delay in health-care seeking when adolescents were ill.

**Status:** In press in African Health Science.

## **Young boys’ and girls’ sexual and reproductive health in Kenya and Zambia**

*Linnea Warenius, Elisabeth Faxelid, Eva Nissen, Bengt Höjer, Joyce Musandu,  
Petronella Chishimba*

The overall aim of this project is to describe and analyse adolescents’ sexual and reproductive health (SRH) needs, and the role of the nurse/midwife in relation to these needs, in order to improve SRH services to adolescents in Kenya and Zambia. Data have been collected among nurses/midwives and in- and out-of-school adolescents in both countries. A pilot intervention with the aim of testing a strategy to improve adolescents’ SRH has also been carried out in each country.

**Funding:** The Swedish Research Council.

**Status:** Data collection completed and analysis in progress. One doctoral student registered and one paper submitted. One manuscript in draft and data for two more papers currently being analysed.

## **Nurses' and midwives' attitudes to adolescent sexual and reproductive health in Kenya and Zambia**

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*Linnea Warenius, Elisabeth Faxelid, Petronella Chishimba, Joyce Musandu, Antony Ong'any, Eva Nissen*

Adolescent sexuality is a highly morally charged issue in Kenya and Zambia. Due to continuous changes in society, deeply rooted values and norms around sexuality are challenged. Nurses and midwives are the core health care providers for adolescents with SRH problems. However, public health services are under-utilised by young people due to various reasons, such as lack of confidentiality and negative attitudes by health professionals. The aim of this study was to investigate attitudes among nurses and midwives towards adolescents with SRH problems. Data were collected with a self-administrated questionnaire, including a Likert scale, among 820 nurses and midwives. Findings revealed that nurses/midwives disapproved of premarital sexual activity including masturbation, use of contraceptives and abortion. However, the results also showed that they had a rather pragmatic attitude when handling these issues. Those who had participated in continuing education related to adolescent sexuality and reproduction showed a tendency towards more youth-friendly attitudes. Based on these findings we suggest that critical thinking and value clarification methods around cultural and moral dimensions attached to adolescent sexuality should be emphasised in undergraduate training as well as in continuing education.

## **Zambian secondary school students' questions about sexuality and reproduction**

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*Linnea Warenius, Karen Odberg-Pettersson, Eva Nissen, Bengt Höjer, Petronella Chishimba, Elisabeth Faxelid*

Our intention in this study was to find out secondary school students' SRH information needs through self-generated questions. In total, 354 girls and 362 boys enrolled in secondary school participated and generated questions related to SRH. Data were analysed with manifest as well as latent content analysis. One overall theme (youth sexuality surrounded by silence), four sub-themes and twelve categories emerged from the data.

**Status:** Analysis is still ongoing and one paper is in manuscript.

## Challenges and constraints encountered by women and midwives during childbirth in Angola and Mozambique

*Karen Odberg-Pettersson, Eva Johansson and Kyllike Christensson*

The overall aim of this study was to investigate the quality of midwifery care in two low-income countries, both facing very high maternal mortality rates. The problem of high prevalence of neonatal hypothermia and neonatal asphyxia was the main focus for the Mozambique study with its specific aim to both implement a training programme based on observed failures in the care and to understand how the caregivers perceived their working situation. In-depth interviews revealed four areas of barriers for the quality of care: existing environment, midwives' expectations of women, midwifery competence and caring technology. It became obvious through the studies that, if the caregivers' perspective is not taken into account, there is very limited chance of improving the care through training programmes.

Sweden has invested a great deal in the development of maternity care in Angola by supporting the implementation of maternity care at peripheral level in the capital Luanda. This new system of autonomously led midwifery care was the topic of several studies with a focus on the perspective of consumers as well as health professionals. The results showed that although the midwives perceived themselves as culturally sensitive and well educated, but with a need for further education and support, women in labour to a great extent avoided institutional delivery. The main reason for avoiding this care was, as shown in other studies, the non-supportive behaviour of the staff, but also the newly developed system of "informal user fee". These results have been given great attention by politicians and policy makers at the local, regional and national levels.

**Funding:** The Swedish Agency for Research Cooperation with Developing Countries (SAREC); University College of Halmstad; the Betanien Foundation; and Karolinska Institutet.

**Status:** Project completed. One doctoral thesis including three published, two accepted and one submitted article.

## Adolescent sexual and reproductive health in Zambia

*Elisabeth Dahlbäck, Staffan Bergström, Bawa Yamba, Anna-Berit Ransjö-Arvidson*

Zambia is one of the countries hardest hit by the HIV/AIDS pandemic, and the health status of both adolescent boys and girls is at risk. Adolescence is a time of challenges and opportunities, and young people search for greater autonomy. However, adoles-

cents are often inclined to engage in behaviour that may have a negative impact on their health status. This study, which is now in progress, is about adolescent sexual and reproductive health in Zambia. Research questions focus on cultural influences, psychosexual development, and adolescent rights to sexual and reproductive health education and services.

A qualitative study was conducted in 2000 and 2001 with the aim of exploring the perceptions that Zambian boys aged 15–19 have about male identity, gender awareness and concerns regarding participation in and responsibility for premarital sexual relationships. Data were drawn from seven focus group discussions and twelve letter writers in two townships one near Lusaka, and the other in Kitwe in the Copperbelt districts. Content analysis was used for analysing the data. Findings showed that boys were influenced by conflicting norms and values between traditional and modern life patterns. Boys emphasised their greater freedom to choose lifestyles and make decisions on sexual matters compared with girls, which contributed to the image of boys being the ‘privileged sex’. Many boys’ awareness of the gender imbalance and the lack of respect for girls was discussed in terms of boys giving money in exchange for sex due to girls’ socio-economic situation. The risk of bringing about long-term health consequences, such as STD/HIV/Aids transmission, unwanted pregnancies and abortions, was then brought into the picture.

New research questions arose from the study, about consequences of adolescent sexual behaviour, and adolescent girls’ vulnerability regarding unwanted pregnancies and abortions. As a consequence, a prospective hospital-based descriptive study was planned. This study focuses on adolescent girls admitted for incomplete abortions to the emergency gynaecological ward at the University Teaching Hospital (UTH) in Lusaka. The purpose of the study is to explore the girls’ socio-economic and reproductive characteristics, knowledge and use of contraceptives, relation to partner of the index pregnancy, whether the abortion was spontaneous or induced, and in the case of induced abortion exploration of reasons for and methods used to interrupt the pregnancy. Data was collected by a semi-structured interview guide including qualitative notes, during a four-month period in the year 2005. Included in the study were 87 adolescent girls admitted with the diagnosis of incomplete abortions, who were haemodynamically stable, and who consented to participate. Analysis is in progress.

**Funding:** Sida/SAREC; the Centre for Caring Sciences and Department of Nursing, Karolinska Institutet; Karolinska Institutet’s travel funds.

**Status:** One article published, one submitted and two manuscripts in progress.

## Adolescent reproductive health care services needs in Swaziland

*Patrica Thuli Mngadi), Isabel Zwane, Bengt Höjer, Elisabeth Faxelid, Anna-Berit Ransjö-Arvidson*

Swaziland is severely hit by the HIV/AIDS epidemic, and especially the adolescents are a vulnerable group regarding social constraints, morbidity and mortality. The general aim of this project is to investigate the quality of childbirth care for adolescent mothers in a maternity hospital in Mbabane, Swaziland, and the mothers' community support after birth. Another aim is to increase understanding of the views and concerns held by adolescent boys about teenage pregnancy and single motherhood. Data have been collected by observations of maternity care, reviews of maternity records, staff interviews, and interviews of newly delivered adolescent mothers before hospital discharge and in their homes. Focus group discussions have been held with adolescent boys.

**Funding:** Sida/SAREC; the Centre for Caring Sciences (CfV) at Karolinska Institutet; the Swedish Institute; the University of Swaziland.

**Status:** The project is a doctoral project and a half-time seminar has been held. Two papers published and one submitted.

## Why do women in Zambia deliver at home?

*Karin Gottvall, Concepta Kwaleyela, Anna-Berit Ransjö-Arvidson, Mutinta Muleya Crecious, Chileshe Mwaba Siwale, Margaret Maimbolwa*

The background of this study was the fact that Zambia has one of the world's highest maternal mortality ratios and that the mortality rate in home deliveries is high. The overall objective is to explore socio-economic, cultural and gender factors contributing to home births in Zambia. Almost all Zambian women (97%) attend antenatal care, and over 91 per cent of the pregnant women state that they prefer to deliver at a health facility. However, only 47 per cent actually give birth at a health facility attended by a skilled birth attendant (midwife, doctor). The reasons for this discrepancy are not known but women who have given birth at home usually come back to the health clinic after birth to register the baby, as this is mandatory in order to enrol a child in school later in life. A survey will be carried out in Lusaka and Mumbwa District. The study population will include women who have attended the antenatal clinics in Lusaka and Mumbwa during pregnancy and who had planned to give birth at a maternity clinic but had a home birth with the assistance of an unskilled attendant. The study will also include the women's male partners, social support person, health workers (midwives, doctors) and key informants working in or with health facilities in the same catchment areas as the women. Women will be recruited from the home delivery

register at the two settings. An interview guide comprising closed and open-ended questions will be used. The interview will contain socio-economic and reproductive characteristics of the women, and questions exploring why women did not come to a health facility to give birth with the assistance of a skilled attendant during labour and delivery. Questions will also focus on women's, husbands' and networks' understanding of the importance of being assisted by a skilled attendant at birth. The health worker staff will be recruited from the selected clinics.

**Funding:** The Centre for Caring Sciences (CfV) at Karolinska Institutet.

**Status:** Ethical approval has been granted for the study and a pilot study is under preparation.

## **Sexuality and health – a study of Tanzanian women's and men's experiences of living with HIV/AIDS**

*Balaile Gunnel, Ransjö-Arvidson, Anna-Berit, Höjer Bengt*

The number of people living with the human immunodeficiency virus (HIV) rose in 2004 to the highest level ever. Just under two thirds of all people with HIV live in sub-Saharan Africa, as do more than three quarters of all women with HIV. These women may transmit the virus to their newborn babies. The most common transmission of HIV today is heterosexual and the infection rate will continue to rise until heterosexual men become the focus of preventive efforts. However, little is known about men's and women's experiences of living with HIV/AIDS from an individual perspective, and this was the focus of the present study. A qualitative, phenomenological – hermeneutical, research approach was chosen. Informants, men and women between 19 and 60 years old, were selected in collaboration with the Health Service organisation in Dar es Salaam, Tanzania. In-depth interviews have been carried out by an experienced nurse-teacher from the Faculty of Nursing, Muhimbili University College, with the assistance of the principal investigator (GB). We found that for the men, living with HIV/AIDS meant profound adjustment to daily life activities but despite frequent incidents of illnesses they felt confident. Their sex life had decreased and had forced them to adopt new strategies to perform intercourse and develop new ideas about how to live as a man. The women described their situation as being deprived of their lives. They had lost their husbands and saw no prospects of marrying again. Feelings of sexual desire were gone and they claimed that sex life had lost its meaning and significance. They experienced lack of resources to support their children and to maintain their life.

**Funding:** The Centre for Caring Sciences (CfV) at Karolinska Institutet; University College of Dalarna; Nordiska Afrika Institutet.

**Status:** One paper submitted and one manuscript in progress.

## **Maternity care in Zambia – with special reference to social support**

*Margaret Maimbolwa, Bawa Yamba, Nsama Sikazwe, Anna-Berit Ransjö-Arvidson, Vinod Diwan*

The Zambian woman starts childbearing early and gives birth to an average of 5.9 children. Only 43 per cent of the women deliver with the assistance of a skilled attendant. The already high levels of maternal deaths are increasing in Zambia. Maternity care is in focus in this thesis because of the crucial impact it may have on childbearing women and the health of their newborn babies.

The aim of the thesis was to describe prevalent maternity-care routines during normal childbirth in Zambian maternity units and the views of staff, newly delivered mothers and social support women (relatives, friends) on providing extra social support for women in labour. The aim was also to measure the effect of extra social support to primiparous women during labour, on labour outcome and mothers' early childbirth and breastfeeding experiences.

A cross-sectional study, including primi- and multiparous women, health staff and social support women, was carried out at the University Teaching Hospital (UTH) in Lusaka, at two urban health centres in Lusaka and at eight district hospitals in the southern province of Zambia. A randomised control trial was performed at UTH and 299 healthy primigravidae women attending antenatal care were randomised to routine labour and delivery care, or offered extra social support during labour by a female companion or a doula. Observations, semi-structured interviews and questionnaires, record reviews and field notes were used to collect data.

It was found that the maternity care routines were not evidence-based and culturally appropriate. Women in labour were confined to bed during the whole labour- and delivery period. Food and drinks were withheld and no gowns to maintain women's privacy were provided. Fetal monitoring was inconsistent and the partograph was either not used or partly lacking. All women were delivered in lithotomy position and there was lack of support for early mother/baby contact, prevention of hypothermia in the babies and early initiation of breastfeeding. None of the women were allowed to have a companion present during labour.

Newly delivered mothers expressed a desire to have a supporting person present during labour, to provide emotional and practical support. Those who were not in favour of the idea gave reasons such as the fact that relatives would interfere with the care provided. Health care staff cited hospital policy and administration of traditional medicine as reasons for not allowing a social support person to stay with a woman in labour.

The majority of the social support women accompanying pregnant women to maternity units were aware of ongoing Zambian traditional childbirth practices and beliefs. Half of them considered themselves as traditional birth attendants (mbusas). They advised the pregnant women on the use of traditional medicine and sexual relations during pregnancy. One third of the social support women were in favour of the idea of giving extra social support to women in labour at Zambian maternity units.

About 40 per cent of the primigravidae were adolescents (14–19 years of age) who had significantly less education than the older age groups. In total 68 per cent were unemployed with inadequate living facilities and financial resources. The majority (78%) had never used a family planning method and their main source of information on sexual issues was friends and mass media. Sixty-three per cent made their first antenatal visit during the second trimester and 22 per cent of the teenagers attended antenatal clinic during the third trimester. Most of the women reported that they had a social support person to assist them at home during the pregnancy and that a relative would escort them to a maternity unit, when labour commenced.

There was significantly more use of analgesia ( $p=0.033$ ), caesarean sections ( $p=0.010$ ) and episiotomies ( $p=0.008$ ) in the control group. Significantly more mothers in the intervention groups perceived that they coped well with the labour ( $p=0.000$ ). There was no difference in labour outcome no matter whether the mother had a doula or a prepared social support person supporting her during labour.

Significantly more mothers in the supported groups stated that their labour had been very easy ( $p=0.02$ ) and more mothers in the supported groups had enjoyed their birth experience. All the mothers had had their infant in skin-to-skin contact with them, shortly after birth. More mothers in the supported groups reported that they were going to have enough milk for their babies ( $p=0.01$ ). There was misconceptions about the value of colostrum and about one fourth of the mothers had had no or poor assistance from the staff regarding breastfeeding. Fifty-five per cent of the fathers had not seen their newborn babies before the mother and baby were discharged from the maternity unit.

Implications for practice: physiological, psychosocial and cultural aspects including preparation for parenthood should be included in the plan of maternity care. Midwives should reorient their practices to evidence-based and culturally appropriate care and involve the woman's social network, including fathers, in the care.

**Funding:** Sida/SAREC, the Swedish Institute.

**Status:** One doctoral thesis including 4 published and 2 submitted articles.

## Reproductive health care among young people in Vietnam - strengthening the role of midwives in reproductive health services

*Marie Klingberg Allvin, Bengt Höjer, Anna-Berit Ransjö-Arvidson, Annika Johansson*

Vietnam is a country in rapid social and economic transition. The abortion figures in Vietnam today are among the world's highest, and abortions among young unmarried women constitute over one third of all reported abortions in Vietnam. There is also a growing concern that HIV may spread to the young people in Vietnam. It is thus important to identify barriers and needs for appropriate reproductive health services in Vietnam for young people, including health care provider's attitudes towards adolescent sexuality. The aim of the project is: (i) to generate more knowledge about problems related to pregnancy, delivery and abortion among adolescents in Vietnam, (ii) to explore the perspectives of health staff (midwives and doctors) and midwifery students on adolescent sexuality and reproductive health, and on their own role in services for adolescents and (iii) to investigate pregnancy and birth-giving and outcomes among adolescents, using data from an epidemiological field laboratory in one of the districts in Vietnam.

The health-care-seeking behaviour of adolescents was studied by means of qualitative interviews, and health providers' attitudes have been discussed in focus group discussions (FGD). Structured questionnaires, including attitudinal scales as well as in-depth interviews, have been used to study the attitudes of midwifery students. Our findings reveal that health care providers and midwifery students have an overall negative attitude towards pre-marital sex, abortion and use of contraceptives among adolescents. They do not see contraceptive counselling as part of their professional responsibility but express a need for further training on these issues. The qualitative study of pregnant adolescents indicates that young married couples have a limited knowledge of contraception, and that women have limited power over decision-making in reproductive health issues.

**Funding:** Health Care Sciences Postgraduate School at Karolinska Institutet and the University College of Dalarna.

**Status:** Half-time seminar conducted; two papers in press and two manuscripts ready for submission.





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**Researchers**

## Doctoral examinations



**Karin Börjesson, RN, RM**

Department of Clinical Neuroscience,  
Division of Psychiatry, Huddinge

Doctoral examination 4 November 2005

**Title:** Mental illness: relation to childbirth  
and experience of motherhood



**Maigun Edhborg, RN, MedLic**

Department of Woman and Child Health

Doctoral examination 3 December 2004

**Title:** Postpartum depressive symptoms in a family perspective:  
some indicators, experiences and consequences



**Cecilia Ekéus, RN, RM, MPH**

Department of Public Health Sciences

Doctoral examination 3 September 2004

**Title:** Teenage parenthood:  
Paternal characteristics and child health outcome



**Annette Ekström, RN, RM**

Department of Woman and Child Health

Doctoral examination 17 March 2005

**Title:** Breastfeeding and quality of care



**Susanne Georgsson Öhman, RN, RM**

Department of Nursing

Doctoral examination 15 April 2005

**Title:** Women's experiences of fetal screening for Down's  
syndrome by means of an early ultrasound examination



**Karin Gottvall, RN, RM, MA**

Department of Nursing

Doctoral examination 23 April 2004

**Title:** Birth Centre Care. Reproductive and Infant Health.



**Ingegerd Hildingsson, RN, RM, MA**

Department of Nursing

Doctoral examination 24 October 2003

**Title:** Women's expectations and experiences of care during pregnancy and childbirth



**Anna Hjelmstedt, RN, RM**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

Doctoral examination 12 December 2003

**Title:** In vitro fertilization – emotional reactions to treatment, pregnancy and parenthood



**Margaret Maimbolwa, RNM**

Department of Public Health Sciences

Doctoral examination 28 January 2004

**Title:** Maternity care in Zambia, with special reference to social support.

**Karen Odberg-Pettersson, RNM, MNSc, MPH**

Department of Public Health Sciences

Doctoral examination 26 March 2004

**Title:** Challenges and constraints encountered by women and midwives during childbirth in low-income countries: experiences from Angola and Mozambique.



**Eva Robertson, RN, RM**

Department of Clinical Sciences, Family Medicine

Doctoral examination 28 November 2003

**Title:** Aspects of foreign-born women's health and childbirth-related outcomes. An epidemiological study of women of childbearing age in Sweden.

**Christine Rubertsson, RN, RM, MA**

Department of Nursing

Doctoral examination 6 June 2004

**Title:** Depression and partner violence before and after childbirth.

**Catarina Widmark, RN, RM**

Department of Nursing

Doctoral examination 27 May 2005

**Title:** Perspectives on women's health: professional and lay stakeholders' views of cervical cancer screening and obstetrical care of circumcised women.

**Annica Örténstrand, RN**

Department of Nursing

Doctoral examination 3 June 2005

**Title:** Paediatric Nursing and parenthood: studies of early discharge of preterm infants, mother's satisfaction with CHC (Child Health Clinic) care, and risk factors for parenting stress.

## Licentiate examinations

### **Sabine Blix-Lindström, RNM, MPH**

Department of Woman and Child Health

Licentiate examination 2005

**Title:** Decision-making related to augmentation of labour: women's and midwives' perceptions regarding influencing factors

### **Louise Seimyr, RNM, MPH**

Department of Woman and Child Health

Licentiate examination 2005

**Title:** Unhappy mothers – disappointed women: perinatal depression and parenthood the first year after childbirth

## Researchers

**Bergström Malin, MA**

Research Assistant, Department of Nursing  
Malin.Bergstrom@ki.se

**Bågedahl-Strindlund Margaretha, MD, PhD**

Associate Professor. Department of Clinical Neuroscience,  
Division of Psychiatry, Huddinge, Stockholm.

**Börjesson Karin, RN, RM, PhD**

Department of Clinical Neuroscience,  
Division of Psychiatry, Huddinge, Stockholm,  
Karin.Borjesson@ki.se

**Christensson Kyllike, RN, RM, PhD**

Professor. Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Kyllike.Christensson@ki.se

**Edhborg Maigun, RN, PhD**

Department of Nursing  
Maigun.Edhborg@ki.se

**Ekéus Cecilia, RN, RM, PhD**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Cecilia.Ekeus@ki.se



**Faxelid Elisabeth, RN, RM, PhD**

Associate Professor. Department of Public Health Sciences,  
Division of International Health (IHCAR)  
Elisabeth.Faxelid@ki.se



**Gottvall Karin, RN, RM, PhD**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Karin.Gottvall@ki.se



**Hjelmstedt Anna, RN, RM, PhD**

Postdoctoral student. Department of Clinical Neuroscience,  
Division of Psychology  
Anna.Hjelmsted@ki.se



**Levál Amy, BA**

Research Assistant. Department of Nursing  
amyleval@yahoo.com



**Nissen Eva, RN, RM, PhD**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Eva.Nissen@ki.se

**Ransjö-Arvidson Anna-Berit, RN, RM, PhD**

Associate Professor. Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Anna-Berit.Ransjo-Arvidsson@ki.se

**Robertson Eva, RN, RM, PhD**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Eva.Robertsson@ki.se

**Rodriguez Alina, BA, PhD**

Department of Nursing, KI, Stockholm &  
Department of Psychology, Uppsala University  
Alina.Rodriguez@Psyk.uu.se

**Tishelman Carol, RN, PhD**

Associate Professor. Department of Nursing, KI, Stockholm & Stock-  
holms Sjukhem Foundation, R&D unit, Stockholm  
Carol.Tishelman@ki.se

**Waldenström Ulla, RN, RM, BA, PhD**

Professor. Department of Nursing  
Ulla.Waldenstrom@ki.se

**Welles-Nyström Barbara, Ed.D**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Barbara.Welles-Nystrom@ki.se

**Widmark Catarina, RN, RM, PhD**

Department of Nursing  
Catarina.Widmark@ki.se

**Widström Ann-Marie, RN, RM, PhD**

Associate Professor. Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care  
Ann-Marie.Widstrom@ki.se

## Doctoral students

**Atuyambe Lynn, BA (Soc), MPH**

Department of Public Health Sciences,  
Division of International Health (IHCAR)



**Balaile Gunnel, RN, RM, MNsc**

Department of Public Health Sciences,  
Division of International Health (IHCAR)



**Binfa Lorena, RM, Mph**

Department of Public Health Sciences

**Byamugisha Josaphat, MD**

Department of Public Health Sciences,  
Division of International Health (IHCAR)

**Bystrova Xenia, MD**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care



**Dahlbäck Elisabeth, RN, RM**

Department of Public Health Sciences,  
Division of International Health (IHCAR)

**Dsilna Ann, RN**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Erlandsson Kerstin, RN, RM, MNSc**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Fabian Helena, RN, MA**

Department of Nursing

**Hertfelt-Wahn Elisabeth, RN, RM**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Jonas Wibke, RN, RM**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Klevberg Agneta, RN**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Klingberg Marie, RN, RM**

Department of Public Health Sciences,  
Division of International Health (IHCAR)

**Lindgren Helena, RN, RM, MNSc**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Olsson Ann, RN, RM**

Department of Karolinska Institutet at Danderyd Hospital



**Rudman Ann, RN, MA**

Department of Nursing



**Schytt Erica, RN, MA**

Department of Nursing



**Svensson Kristin, RN, RM**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care

**Söderström Malin, RN, RM**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care



**Thuli Mngadi Patricia, RN, RM**

Department of Public Health Sciences,  
Division of International Health (IHCAR)

**Warenius Linnea, BSc**

Department of Public Health Sciences,  
Division of International Health (IHCAR)

**Welandia Marianne, RN, RM**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care



**Wiklund Ingela, RN, RM**

Division of Obstetrics and Gynaecology, KI, Danderyd Hospital

## Associates/co-authors

**Aarts Clara, RN, PhD**

Department of Public Health and Caring Sciences, Uppsala University.

**Ahlberg Beth Maina, PhD, Professor**

Department of Women's and Children's Health, Division for International Maternal and Child Health (IMCH), Uppsala University & the Skaraborg Institute for Research and Development, Skövde.

**Ahmed Yusuf, MD**

Department of Obstetrics and Gynaecology, University Teaching Hospital, Lusaka, University of Zambia, Zambia.

**Alfredsson Lars, BSc, PhD, Professor**

Institute of Environmental Medicine, KI, Stockholm.

**Andolf Ellika, MD, PhD, Associate Professor**

Division of Obstetrics and Gynaecology, KI, Danderyd Hospital, Stockholm.

**Berg Mari, RN, RM, PhD**

Sahlgrenska Academy, Göteborg University.

**Bergström Staffan, Professor**

Department of Public Health Sciences,  
Division of International Health (IHCAR), KI, Stockholm.

**Blennow Mats, MD, PhD, Associate Professor**

Department of Clinical Sciences, KI, Stockholm.

**Chishimba Petronella, RNM, MPH**

Kitwe School of Nursing, Kitwe, Zambia.

**Cnattingius Sven, MD, PhD.****Collins Aila, PhD, Associate Professor**

Department of Clinical Neuroscience, Division of Psychology, KI, Stockholm.

**Diwan Vinod, MD, Professor**

Division of International Health (IHCAR), KI, Stockholm.

**Dumas Louise, RN, MSN, PhD**

University of Quebec, Outaouais, Quebec, Canada.

**Eberling Marie, RN, RM**

Department of Caring and Public Health Sciences, Mälardalen University, Västerås.

**Edman Gunnar, MD, Professor**

Division of Psychiatrics, Danderyd Hospital, KI, Stockholm.

**Ejdeback Mikael**

School of Life Sciences, University College of Skövde.

**Fagerberg Ingegerd, RN, PhD, Associate Professor**

Department of Caring and Public Health Sciences, Mälardalen University, Västerås.

**Gemzell-Danielsson Kristina, MD, Professor**

Department of Woman and Child Health, KI, Stockholm.

**Grunewald Charlotta, MD, PhD, Associate Professor**

Department of Obstetrics and Gynaecology, Södersjukhuset, Stockholm.

**Gustavsson Petter, BA, PhD**

Department of Nursing, KI, Stockholm.

**Hanson Lars Åke, MD, PhD, Emeritus Professor**

Department of Clinical Immunology, Göteborg University.

**Henriksson Peter, MD, Professor**

Division of Medicine, Danderyd Hospital, KI, Stockholm.

**Hjern Anders, MD, PhD, Professor**

Department of Paediatrics, Uppsala University.

**Högberg Ulf, MD, PhD, Professor**

Department of Public Health and Clinical Medicine, Umeå University.

**Höjer Bengt, MD, Professor**

University College of Dalarna, Falun.

**Istedt Lars, MD, PhD, Associate Professor**

Department of Anaesthesiology and Intensive Care,  
Karolinska University Hospital, Stockholm.

**Johansson Annika, BA, PhD**

Department of Public Health Sciences,  
Division of International Health (IHCAR), KI, Stockholm.

**Johansson Eva, RN, MNsc, MPH, PhD, Associate Professor**

Department of Public Health Sciences,  
Division of International Health (IHCAR), KI, Stockholm.

**Kirumira Edward, Associate Professor, PhD**

Faculty of Social Sciences, Makerere University, Kampala, Uganda.

**Klang Birgitta, RN, PhD**

Karolinska Institutet

**Lagercrantz Hugo, MD, PhD, Professor**

Department of Woman and Child Health, Division of Neonatology, KI, Stockholm.

**Lange Stefan, MD PhD**

Department of Clinical Bacteriology, Göteborg University.

**Lindmark Gunilla, MD, PhD, Professor**

Department of Women's and Children's Health,  
Division for International Maternal and Child Health (IMCH), Uppsala University.

**Lundberg Ingela, RN, RM, PhD**

University College of Borås.

**Lönnroth Ivar, MD, PhD**

Department of Clinical Bacteriology, Göteborg University.

**McLachlan Helen, RN, RM, PhD**

Department of Nursing, La Trobe University, Melbourne, Australia.

**Mirembe Florence, MD, Associate Professor, PhD**

Department of Obstetrics and Gynaecology, Makerere University, Kampala, Uganda.

**Musandu Joyce, RNM, PhD**

Department of Nursing Sciences, University of Nairobi, Kenya.

**Navér Lars, Consultant neonatologist**

NICU, Department of Paediatrics, Karolinska University Hospital, Huddinge and Division of Paediatrics, Department of Clinical Sciences, Intervention and Technology (CLINTEC), KI, Stockholm.

**Nguyen Thu Nga, MD, MPH**

Uong Bi General Hospital, Vietnam.

**Odberg-Pettersson Karin, RN, RM, PhD**

University College of Halmstad.

**Olin Lauritzen S, BA, PhD, Professor**

Department of Education, Stockholm University.

**Olsson Pia, RN, RM, PhD**

Department of Women's and Children's Health,  
Division for International Maternal and Child Health (IMCH), Uppsala University.

**Ong'any Antony, RNM, MSc**

Department of Nursing Sciences, University of Nairobi, Kenya.

**Ringbäck-Weitofte Gunilla, PhD**

Centre for Epidemiology, National Board of Health and Welfare, Stockholm.

**Ruppert S. MD, PhLic**

Department of Clinical Neuroscience,  
Division of Forensic Psychiatry, Huddinge, Stockholm.

**Ryding Elsa-Lena, MD, PhD**

Department of Obstetrics and Gynaecology,  
Karolinska University Hospital, Stockholm.

**Rådestad Ingela, RN, RM, PhD, Associate Professor**

Department of Caring and Public Health Sciences, Mälardalen University, Västerås.

**Saltvedt Sissel, MD, PhD**

Department of Obstetrics and Gynaecology, Södersjukhuset, Stockholm.

**Sikazwe Nsame, MD, MRCOG**

University Teaching Hospital, School of Medicine, Lusaka, Zambia.

**Thingström-Paulsson Joanna, RN, RM**

Mama Mia, Stockholm.

**Uvnäs-Moberg Kerstin, MD, PhD, Professor**

Swedish University of Agricultural Sciences (SLU), Skara.

**Vinnerljung Bo, PhD, Professor**

Stockholm University.

**Vorontsov Igor, MD, Professor**

Paediatric Academy, St Petersburg, Russia.

**Wager J. MD. PhD**

Department of Clinical Sciences, Intervention and Technology (CLINTEC),  
Division of Obstetrics and Gynaecology at Huddinge, Stockholm.

**Wahlberg Vivian, RN, RM, PhD, Emeritus Professor**

Ersta Sköndal University College, Department of Health Care Sciences, Stockholm.

**Weimers Lena, RN, MNsc, IBCLC**

Neonatal Unit, K76-78, Karolinska University Hospital, Huddinge.

**Westerberg Christina, RN, RM, Lecturer**

Department of Woman and Child Health,  
Division of Reproductive and Perinatal Health Care, KI, Stockholm.

**Wickberg Birgitta, BA, PhD, Associate Professor**

Department of Psychology, Göteborg University.

**Winbladh Birger, MD, PhD, Professor**

Department of Paediatrics, Södersjukhuset, Stockholm.

**Wramsby Håkan, MD, PhD, Associate Professor**

IVF-Stockholm, St Göran's Hospital, Stockholm.

**Yamba Bawa, Associate Professor, anthropologist**

Diakonihjemmet, Oslo, Norway.

**Zwane Isabel, RNM, MPH, PhD**

Faculty of Health Sciences, University of Swaziland, Swaziland.



**Karolinska  
Institutet**