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# Women's preference for caesarean section and the actual mode of delivery – Comparing five sites in Norway



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#### ABSTRACT

*Objectives:* The caesarean (CS) section rate varies among hospitals in Norway, and little is known about whether this is influenced by women's preferences. The aim of this study was to investigate the differences in women's preferred mode of delivery during pregnancy between five hospitals in Norway, and to relate this to the actual mode of delivery.

*Study design:* A prospective cohort study of 2,177 unselected pregnant women in five hospitals in Norway. Women were recruited at their standard ultrasound examinations, and data was collected through questionnaires and electronic patient charts. The exposure was a CS preference and the main outcome measure was the actual mode of delivery.

*Results*: In total, 3.5% of the primiparous women and 9.6% of the multiparous women reported a preference for CS. This was associated with fear of childbirth and education between 10 and 13 years in both groups, symptoms of depression and an age over 35 years old among the primiparous women, and a previous CS and/or negative birth experience among the multiparous. The multiparous women in Drammen and Tromsø were less likely to prefer a CS, and none of the primiparous women in Tromsø preferred a CS. A total of 67.8% of those who preferred a CS gave birth with this mode of delivery.

*Conclusion:* There were significant differences between the hospitals according to the CS preference. This preference was associated with the previous obstetric history and psychological factors. Therefore, creating good birth experiences and offering women counselling may reduce the CS preference rate.

#### Introduction

There has been an increase in the caesarean section (CS) rate, both globally and in Norway, over the last few decades [1,2]. In addition, there is a tendency toward more women preferring a CS [3], and therefore, delivering their babies via CSs without medical indications [4,5]. Since 1985, the World Health Organization (WHO) has considered the ideal CS rate to be 10–15% [6], and it has recommend the demedicalisation of normal pregnancy and birth, with only the necessary interventions being implemented [7]. In Norway, the CS rate has increased from 4% in 1995 to 16% in 2015 [2]. It has remained around 16% over the last decade; however, there is a large variation between

the hospitals, from 10% to 25% [2].

The increase in CSs has partly been explained by the changes in the population of pregnant women [8]. Generally, women are older when they give birth, their mean body mass indexes (BMIs) have increased, and there are proportionally more multiple pregnancies [2]. Among other factors are the changes in obstetric practice [8], and that a woman's own preferences are taken into consideration when the mode of delivery is chosen [9,10].

In Norway, a CS is not recommended by maternal request alone, without medical indications [11]. Despite this, a Norwegian study found that the two most common indications for an elective CS were maternal request and a previous CS [4]. A Swedish study that examined

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the changes in the indications for CSs from the early 1990s to 2005 found that the dominant indication for an elective CS had changed from a purely medical indication, like a pathological foetal position, to a psychosocial indication, like a fear of childbirth (FOC), or a maternal request with no coexisting medical indications [5]. Other studies have found that a desire for a CS was associated with FOC, previous CS and negative birth experience [12–14].

A CS is associated with an increased medical risk [11]. It is a major operation with a risk of infection, bleeding, thrombosis, damage to the abdominal organs and possible complications in subsequent pregnancies [15,16]. Children born by CSs often need respiratory care afterwards, and they are at a greater risk of developing asthma [17,18].

Because of the tendency toward more women preferring a CS, and because a CS is associated with a higher risk, it is of interest to explore the variations in the CS preferences and mode of delivery among hospitals. Therefore, the aim of this study was to investigate the differences in women's preferred mode of delivery during pregnancy between five hospitals in Norway, and relate these preferences to the actual mode of delivery. In addition, the associations between the different sociodemographic, psychological and obstetric factors and a CS preference were examined.

#### Materials and methods

This study was based on the Bidens cohort study, which was conducted in six European countries: Belgium, Iceland, Denmark, Estonia, Norway and Sweden [19]. The main purpose of the Bidens study was to investigate the factors related to maternity anxiety, abuse history and the mode of delivery in order to improve pregnancy and childbirth care. The Norwegian data from the Bidens study was used in our analyses.

The data was obtained from unselected pregnant women at five hospitals in five cities in Norway: Ålesund, Drammen, Trondheim (St. Olavs University Hospital), Tromsø (University Hospital of North Norway) and Oslo (Oslo University Hospital, Rikshospitalet). The first two are local hospitals and the last three are university hospitals.

#### Recruitment

The participants were recruited from March 2008 to August 2010. At the hospitals in Ålesund and Drammen, the study invitation and a consent form were sent together with the invitation for the routine ultrasound screening to all women that planned to give birth at the hospitals. Each woman received a questionnaire with a prepaid envelope at her ultrasound screening at around week 18. In Oslo, Trondheim and Tromsø, an invitation was sent together with the questionnaire and the consent form in an included prepaid envelope after the ultrasound screening to all women except those with major foetal pathologies. The invitation, consent form and questionnaire were written in Norwegian. To participate in the study, each woman had to have mastered the language sufficiently to fill out the form.

In total, 2431 Norwegian women were recruited in the Bidens study. For the study, 254 women were excluded: 20 did not report a preferred mode of birth, 59 were expecting twins, 30 had unknown parity, 139 were missing data about the mode of delivery and 6 had incomplete answers about abuse. Therefore, the total number of women included in our study was 2177. Of these, 453 women were recruited from Trondheim, 361 from Tromsø, 479 from Ålesund, 423 from Drammen and 461 from Oslo. The average answer rate was 50%, with the highest in Oslo (61%) and lowest in Ålesund (44%) [19].

#### Instrument

The demographic data was obtained from the questionnaires, and the birth outcome data was later collected from the electronic patient charts. The questionnaire included the sociodemographic information and obstetric history, in addition to validated self-assessment scales, such as the short version of the Edinburgh Depression Scale (EDS) [20], the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) [21] and the NorVold Abuse Questionnaire (NorAQ) [22].

#### Data coding

The preferred mode of birth was assessed by asking "How would you prefer to give birth?" with four response options: vaginally, probably vaginally, probably CS and CS. The response options were used both individually and in two main categories: preferred vaginal birth and preferred CS birth. Those who responded "CS" or "probably CS" were classified as preferring a CS.

The mode of delivery were collected from the electronic patient charts and included "spontaneous vaginal birth", "vacuum", "forceps" and "CS". However, the first three were recoded as "vaginal birth". To determine whether it was an elective or emergency CS, the participants were asked if the CS was planned, with the following response options: "no", "yes, and performed as an elective caesarean section" and "yes, but performed as an emergency CS, was coded as an emergency CS. The CS indications included "foetal distress", "dystocia", "maternal request", "psychosocial reasons" and "other medical reasons". Multiple answers were allowed. The answer options "maternal request" and "psychosocial reasons" were recoded into "only non-medical" if no other reasons were given.

The sociodemographic variables were coded as shown in the tables. The age and gestational age (GA) were collected as continuous variables, but recoded as presented in Table 2. The GA was used as both a continuous and categorical variable.

To assess the symptoms of depression, the 5-item version of the EDS was used. The EDS-5 is a 4-point scale with a minimum score of 0 and a maximum of 15. An EDS score  $\geq$  7 was defined as moderate to severe symptoms of depression [20].

The FOC was assessed with the W-DEQ, an instrument validated to assess the FOC [21]. The W-DEQ consists of a 6 point, 33-item self-assessment rating scale, with a minimum score of 0 and maximum score of 165. A woman was defined as having a severe FOC if the total score was 85 or greater [21,23].

The questions from the validated NorAQ measured emotional, physical and sexual abuse, and were used to investigate whether the women had experienced abuse [22]. A woman was defined as having a history of abuse if she answered yes to at least one of the questions, excluding a mild degree of physical abuse as a child.

The multiparous women were asked about their previous modes of delivery and their first and most recent childbirth experiences. A previous CS history included those women who previously had elective or emergency CSs and no vaginal births. The birth experience was considered to be negative if the woman described it as a "purely negative experience" or a "mainly negative experience, but with positive elements".

#### Ethics

This study was approved by the Regional Committees for Medical and Health Research Ethics (REC; 2006/72) and the Norwegian Centre for Research Data (NSD; 15214/3/). The women signed consent forms, which included participation and allowed data collection from the patient charts.

#### Statistical analysis

Cross-tabulation and the Pearson's chi-squared test were used to analyse the proportions and assess the differences in the preferred mode of birth and actual mode of delivery at the different hospitals. The GA continuous variable was analysed by using the one-way ANOVA. The CS indications and background variables, according to the preferred mode Download English Version:

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