

Original research article

# Use of contraception among women who request first trimester pregnancy termination in Norway

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## Abstract

**Objectives:** Among women requesting pregnancy termination, we studied the proportion of women who reported having used contraception when they became pregnant and the contraceptive method that they had used.

**Study design:** We included all requests for pregnancy termination in Norway during the years 2007–2011 ( $n=80,346$ ) by obtaining information from the Norwegian Registry of Pregnancy Termination. By using a logistic regression model, we estimated odds ratios for using any contraceptive method associated with the woman's age, previous childbirth, previous pregnancy termination, marital status, employment status and educational level.

**Results:** In total, 36.5% of the women who requested pregnancy termination (29,305/80,346) reported having used contraception when they became pregnant. Of all women, 16.6% reported having used the combined contraceptive pill/progestin pill, 11.5% the condom and 1.1% long-acting reversible contraceptives (1.0% intrauterine contraception). Overall, 38.9% of women 20–24 years old had used contraception, compared to 29.9% of women 40–44 years old (odds ratio 0.55, 95% confidence interval 0.51–0.60). Previous childbirth, previous pregnancy termination and high educational level were also associated with contraceptive use.

**Conclusion:** Among women who requested pregnancy termination in Norway, 36.5% reported having used contraception when they became pregnant. Contraception use was associated with young age and having previously been pregnant.

**Implications:** A large proportion of women who request pregnancy termination have experienced contraceptive failure. Women who are fertile and do not wish to become pregnant should be offered a contraceptive method that carries low risk of incorrect use.

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*Keywords:* Contraception; Pregnancy termination; First trimester; Risk factors

## 1. Introduction

In many western countries, about 20% of all first trimester pregnancies are terminated [1]. Unwanted pregnancy and pregnancy terminations are public health issues worldwide [2]. In Europe, the pregnancy termination rate varies between countries from 6 to 34 pregnancy terminations per 1000 women aged 15–44 years [3]. In Norway, the rate is 13 per 1000 women [4]. Easy access to contraception, particularly for young women, is considered to be an important strategy for prevention of unwanted pregnancies [5].

Contraceptives may fail due to user failure or due to method failure. If the majority of women, who experience contraceptive failure, do not want or find it impossible to have a child, it is likely that these women represent a large proportion of the women who request pregnancy termination.

Several studies have reported that up to two thirds of the women who request pregnancy termination had used contraception when they became pregnant, both in western and nonwestern countries [6–10]. Most previous studies are based on selected samples of women. Underreporting of pregnancy termination is widespread in countries where termination of pregnancy is illegal or the access is restricted [11]. We are not aware of any studies of the prevalence of contraceptive use among all the women in a country who request pregnancy termination.

Norway has national reporting of contraception use among women who request pregnancy termination. Based

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on this national reporting, we studied the proportion of women who reported having used contraception when they became pregnant. We also studied which contraceptive method they had used. In addition, we estimated the associations of age, previous childbirth, previous pregnancy termination, marital status, employment status and level of education with reported contraceptive use.

## 2. Material and method

Included in our study were all requests for pregnancy termination in the first trimester in Norway during the years 2007–2011. First trimester pregnancy terminations in Norway are performed on women's request. We used data from the Norwegian Registry of Pregnancy Termination, to which all requests for pregnancy termination are reported by law [12]. The requests for pregnancy termination are reported anonymously by a standardized patient record. The patient record is completed by the doctor who performs the clinical examination before the termination, typically 2–5 days before the termination [13]. The health institution, in which the termination is to be performed, is responsible for the reporting. In Norway, pregnancy termination is free of charge for the women, and the termination is performed or initiated in public health hospitals only.

The standardized patient record includes information from clinical interview, and we have used the following variables in our study; use of contraception, previous childbirth, previous pregnancy termination, marital status, employment status and education level. We also included region of residency in Norway as a potential confounding factor, since the pregnancy termination rates vary by region [4].

The different methods of contraception were reported to the Norwegian Registry of Pregnancy Termination as follows: no contraception, rhythm method, withdrawal, postcoital contraceptive, condom, combined contraceptive pill/progestin pill, estrogen–progestin patch, estrogen–progestin ring, injectable contraceptives, intrauterine contraception (with levonorgestrel), intrauterine contraception (without levonorgestrel), progestin subcutaneous implants, sterilization of the woman, sterilization of the male partner or other contraceptives. We grouped contraceptive methods as follows: (a) no contraception; (b) rhythm method including rhythm method, withdrawal and postcoital contraceptive; (c) condom; (d) short-acting hormonal contraception including combined contraceptive pill/progestin pill, estrogen–progestin patch or ring and injectable contraceptives (progestin); (e) long-acting reversible contraception (LARC) including intrauterine contraception (with or without levonorgestrel) and progestin subdermal implant; (f) sterilization (of the woman and/or partner); (g) other contraceptives; or (h) missing information. Use of any of the above contraceptive methods (b through g) was also grouped as use of contraception, and coded yes or no.

The woman's age was categorized as  $\leq 19$ , 20–24, 25–29, 30–34, 35–39, 40–44 or  $\geq 45$  years old. Number of

previous childbirths after pregnancy week 22 and number of previous pregnancy terminations were coded 0, 1 or  $\geq 2$ . Marital status was categorized as married/cohabiting, unmarried/single or divorced/widow. Employment status was categorized as paid employment, full time/part time, student without and student with paid employment or unemployed/receiving welfare benefits. *Educational level* was defined as the highest completed level of education: elementary school (9 years), high school (12–13 years) or college/university ( $> 13$  years). Region of residency in Norway was coded: East, Oslo (the capital), South, West, Central or North.

We calculated the proportion of women who reported having used any contraception and the proportions that had used the various contraceptive methods. Differences in proportions were tested by applying chi-square test. We also estimated crude and adjusted odds ratios (OR and aOR) with 95% confidence interval (CI) for use of any contraception according to woman's age and the study factors listed above by using logistic regression analyses. All statistical analyses were performed by using Statistical Package for the Social Sciences (SPSS) Version 21.0 or Windows (SPSS Inc., Chicago, IL, USA).

## 3. Results

The mean age of the women was 27.5 years [standard deviation (S.D.) = 7.1 years], and the median age was 26 years (range, 12–52 years) (Table 1). Women in the age group 20–24 years represented 28.3% of all requests for pregnancy termination, and women in the age group 25–29 years represented 22.2% of all requests.

In total, 36.5% of the women who requested pregnancy termination reported having used contraception when they became pregnant. Of all women, 11.5% reported condom use, 2.4% reported rhythm method use and 18.9% reported having used short-acting hormonal contraception. The most commonly used short-acting hormonal contraception was the combined contraceptive pill/progestin pill, which was reportedly used by 16.6% of all women. In total, 0.4% of the women reported having used injectable contraceptive (progestin). Only 1.1% of all women who requested pregnancy termination reported having used LARC (1.0% intrauterine contraception) (Table 2). Of the 219 women who reported use of sterilization as contraceptive method (0.3%

Table 1  
Demographic characteristics of the study population

Age in years, mean (S.D.)	27.5 (7.1)
Age in years, median (range)	26 (12–52)
Previous termination of pregnancy % (n)	36.7 (29,483)
Previous childbirth % (n)	48.3 (38,804)
Having paid income % (n)	53.0 (42,545)
Married or cohabiting % (n)	43.9 (35,300)

All women with request for pregnancy termination within the end of pregnancy week 12, in Norway during 2007–2011 (n=80,346).

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