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Prevalence and associated factors of fear of childbirth in six European countries ☆

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ABSTRACT

Objectives: This study set out to compare the prevalence, content and associated factors of fear of childbirth in six European countries.
Method: A cross-sectional study of 6870 pregnant women attending routine antenatal care in **B**elgium, **I**celand, **D**enmark, **E**stonia, **N**orway and **S**weden (Bidens).Main outcome measure: Severe fear of childbirth, defined as a Wijma Delivery Expectancy Questionnaire score of ≥85.
Results: Eleven percent of all women reported severe fear of childbirth, 11.4% among primiparous and 11.0% among multiparous women. There were significant differences between the countries for prevalence of severe fear of childbirth, varying from 4.5% in Belgium to 15.6% in Estonia for primiparous women and from 7.6% in Iceland to 15.2% in Sweden for multiparous women. After adjusting for age, education and gestational age, only primiparous women from Belgium had significantly less fear of childbirth, AOR 0.35 (0.19–0.52) compared with Norway (largest participating group). Exploratory factor analyses revealed significant differences between the countries for the six factors extracted.
Conclusion: FOC appears to be an international phenomenon, existing with similar proportions in the participating European countries, except for primiparous women in Belgium who in our study reported significantly less severe fear of childbirth. Our study suggests that the content of fear of childbirth may differ between countries.

Introduction

Fear of childbirth (FOC) has been described as anxiety caused by the appraisal of a possible future delivery [1]. FOC can be viewed as a continuum ranging from negligible to extreme fear [1]. Besides influencing the emotional experience of pregnancy and birth, FOC may have an impact on mode of delivery [2,3]. FOC is a common reason for elective Caesarean sections (CS) on maternal request without a medical indication [4,5] and on occasions of uncertainty about mode of delivery, it may influence the decision towards an elective CS.

Approximately 10% of pregnant women in Western countries report suffering from FOC to a degree which is dysfunctional and disabling [3,6–8]. Comparing countries is hampered by the lack of uniform instruments used to investigate the concept and different dimensions of FOC [1,3,9–11]. Dimensions assessed include expectations about the upcoming birth regarding support in labour, a woman's ability to be involved in decisions on pain relief and fear for health of the child. These expectations may be influenced by the organisation of the health care system and how women and society in a particular culture/country view childbirth [9,12]. For example, in Sweden and Norway most maternity care units have specialised services for women with FOC, while Belgium and Estonia lack such a service.

So far, three studies have compared the level and content of FOC across countries. Kjærgaard et al [12]. compared FOC in obstetrically low-risk nulliparous women in Sweden and Denmark using the 33-item Wijma Delivery and Expectancy/Experience Questionnaire (W-DEQ) [1]. Data were collected at different times (1996 in Sweden, 2004 in Denmark) as part of different research projects. This small study (55 Swedes and 110 Danes) found no significant

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difference between the countries in regard to the level of FOC, neither during pregnancy nor during early labour, even though women in Denmark were more likely to meet a known midwife in labour [12]. The second study explored the association between FOC and medicalisation by comparing 833 Belgian and Dutch pregnant women's attitudes towards childbirth using a four-dimensional model based on the W-DEQ [9]. This study concluded that Belgian women in midwifery care were more fearful of medical interventions and hospital care compared with Dutch women receiving midwifery care. The third study compared Australian and Swedish pregnant women, using two Visual Analogue Scale based questions and 16 attitudinal items in the Fear of Birth Scale [13,14]. Close to 30% of the women were defined as having elevated levels of childbirth-related-fear and no significant difference between the countries [13]. However, they did observe significant cross-national differences in the attitudes towards childbirth women held, suggesting that the cultural context and system of care have an impact on these [14]. No studies to date have compared the prevalence of FOC between more than two countries using the same measuring instrument. The primary aim of this study was to assess the prevalence of severe FOC in six Northern European countries. The second aim was to investigate the association between severe FOC and selected background variables. Thirdly, we wanted to explore if the content of fear was different for the participating countries.

Methods

The Bidens study, a six-country cohort study of pregnant women was the result of an EU-funded collaboration between the Norwegian University of Science and Technology (NTNU) and partners from Universities and Hospitals in six European countries (Belgium, Iceland, Denmark, Estonia, Norway and Sweden) [15]. A short description of the study sites is given in Suppl. Table S1. There were between one and seven urban antenatal care sites of data collection in each country with the most in Norway [5] and Sweden [7].

Recruitment took place between March 2008 and August 2010. A total of 7200 women who consented, subsequently completed a questionnaire and allowed the extraction of specified data on their delivery from their medical notes. Due to country specific organisation as well as the requirements of local ethical committees, minor variations in the recruitment procedure occurred.

In *Belgium*, women were approached by the midwife or secretary when attending antenatal care. Women were asked to complete the questionnaire in the privacy of a separate room. In *Iceland* women were recruited when attending routine ultrasound and returned completed forms by mail. In *Denmark* women were given information about the study when attending early routine ultrasound screening and were mailed the questionnaire later. They returned the questionnaire by mail or when attending their next ultrasound examination. In *Estonia* women were invited to participate while visiting for an antenatal consultation. After completing the questionnaire it was left in a mailbox at the clinic. In *Norway,* women received the questionnaire by mail and returned it by mail, after attending routine ultrasound. Non-responders were sent one reminder. In *Sweden*, the questionnaire was administered to women when attending routine glucose tolerance tests and filled out during the 2 hours between the blood samplings.

The right to obtain information on non-participating women varied between countries and hence the basis for calculating response rates. In *Belgium* and *Sweden* registrations of non-participants was not allowed, the response rate was estimated at 50% and 78%, respectively. In *Iceland* and *Denmark* the response rate was 65% and 57.3%, respectively (no reminder). In *Estonia,* the response rate was 90%, based on number of questionnaires given to the assigned study midwives and number of filled out forms returned. In *Norway* the participation rate was 50% (one reminder). The estimated response rate varied between 50% in Norway to 90% in Estonia.

For the purpose of this study we excluded 330 women, 216 who failed to answer seven or more of the 33 W-DEQ questions on fear [12], and 114 women for whom we lacked information on parity. Of the 6870 women left in the sample, 828 were Belgian, 585 Icelandic, 1252 Danish, 896 Estonian, 2351 Norwegian and 958 Swedish.

Women filled out a 68-items questionnaire which included a number of validated and previously used instruments, such as the Edinburgh Depression Scale (short version) [16], the Norvold Abuse Questionnaire (NorAq) [17] and the W-DEQ version A [1]. The W-DEQ version A measures fear of childbirth as operationalised by the cognitive appraisal of the coming delivery. A complete version of the questionnaire was developed in English. The questionnaire was translated into the required languages by a native speaker of each of the respective languages (Flemish, Icelandic, Danish, Estonian, Russian, Norwegian and Swedish) and then translated back again into the source language. The original and back-translated copies were then compared and discussed in order to achieve a valid translation. Where a good and previously used version of an instrument existed this was used. The W-DEQ was developed in Sweden, so the original version was used there [1].

Variables

FOC was assessed by the W-DEQ version A [1], including 33 items, each scoring from 0 to 5. The sum score ranges from 0 to 165; the higher the score is, the greater the FOC. A sum score of 85 or more is considered to represent severe FOC [18]. Parity was derived from a question asking women how many children they had given birth to. Women reported their education by checking one of four predefined categories, which was coded into two levels of education less than 13 years and 13 years or more. Economic hardship was investigated by asking women how easy it would be for them to pay a bill of 25.000 NOK (4230 US$) within a week. This amount was then adjusted for the other countries using the consumer price index (CPI). The answering option "very difficult" was defined as experiencing economic hardship. A history of any abuse was defined a positive answer to having experienced emotional, physical or sexual abuse as an adult or child [19]. Abuse in the health care was coded in the same way but kept as a separate variable. Women indicating that beside their partner they had no one to confide in were categorised as not having social support. Women were asked if they during the last 12 months had experienced the post-traumatic stress symptoms of avoidance, intrusions and numbness. A positive answer to any of these defined a woman as having post-traumatic stress symptoms [20]. Questions of negative life events experienced in the last 12 months included nine specific items such as serious illness, death, injuries, divorce, family and work related problems as well as one item called "other". Besides indicating if they had experience the event (yes = 1 or no = 0), women evaluated their experience (not too bad = 1, bad = 2 and very bad = 3). Women who indicated having experienced an event without reporting the evaluation were coded as 1 for that event. The total score ranged from 0 to 27. We defined a total score of ≥6 (the 90th percentile) as suffering from life events.

Women were asked about the mode of delivery for their first and last birth. Any previous emergency caesarean was coded as previous emergency CS. Any previous planned CS and no previous emergency CS was coded as previous planned CS. Any previous instrumental vaginal birth and no previous CS was coded as previous instrumental birth. The category previous normal vaginal birth included therefore women having indicated only this method of delivery. Experience of previous childbirth was assessed by one question and the woman was said to have a negative birth experience if she described it as "mostly negative" or "very negative" and not

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