FACtORS ASSOCIATEd WITH CHILDBIRTH – RELATED FEAR AMONG SLOvAK WOMEN

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Abstract

Aim: Aim of the study was to examine the intensity of childbirth-related fear, its components and relationship with selected variables (age, parity, and delivery history) among pregnant women in Slovakia. Design: The study was designed as a descriptive cross-sectional study. Methods: A cross-sectional study, 156 pregnant women participated in the research (age 29.7 ± 4.73). The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ, version A) was used to assess the intensity of childbirth-related fear. A short questionnaire of our own design was used to measure the components of child-related fear. Correlation analysis, ANOVA, and linear regression were employed. Results: The average intensity of child-related fear in the research sample was 68.8 (± 11.6), extreme fear was identified among 9.6% of pregnant women. Child-related fear and age were significantly negatively correlated (R = -0.16; p = 0.05). Results of ANOVA showed significant differences in intensity of fear according to delivery history (F = 4.58; p = 0.005). In the linear regression model, parity and delivery history were shown to be significant predictors of fear of childbirth. The most prevalent components of childbirth-related fear were pain (21.2%), prolonged labor (19.2%), and use of forceps or vacuum extraction (17.6%). Conclusion: Being a primipara, or perceiving a previous labor as complicated were significant factors influencing the fear of childbirth in our sample. The identification of the components and related factors of childbirth-related fear is important in planning effective intervention strategies aimed at anxiety prevention during pregnancy, and contributes to improvement in the quality of life of pregnant women.

Keywords: content of fear, childbirth-related fear, childbirth-related fear prevention, predictors of childbirth-related fear, pregnant women.

Introduction

Fear of childbirth (FOC) is regarded as the most frequent fear during the period of pregnancy, according to certain studies (Petersen et al., 2009; Haines et al., 2012). In a study by Demšar et al. (2015) approximately 75% of women had low or medium FOC, while the remaining quarter had high or very high FOC. Other studies have shown that approximately 20% of nulliparous women experience medium or intense levels of FOC, requiring the professional help and support of healthcare professionals, in addition to that of their families. Approximately 6% of women suffer from phobic FOC (tokophobia), which is often related to previous labor trauma (Butcher, 2014; Gosselin et al., 2016).

To a varying extent, the following factors are considered to be predictors of FOC during pregnancy: previous life experience, hearing negative stories about labor, posttraumatic stress disorder (caused by rape, abuse, or a previous complicated labor), lack of childbirth experience, ambivalence towards pregnancy and maternity (Hart, McMahon, 2006), age, education, social-economic status, and lack of social support (Laursen et al., 2008; Räisänen et al., 2014). Other studies have indicated significant psychological predictors for FOC, for instance, personality type, anxiety, and low self-esteem (Ryding et al., 2007; Handelzlats et al., 2015; Klabbers et al., 2016), and psycho-social FOC predictors (Toohill et al., 2014).

Childbirth as a biological process is represented by various physiological factors, some of which might be perceived as unknowable or uncontrollable by pregnant women. For some, this situation is psychologically complicated, and might result in increased feelings of insecurity, anxiety, and intense childbirth-related fear. Conversely, positive and relaxed feelings increase the probability of simple and complication-free labor. A feeling of security is
very important for the psychological well-being of an expectant mother. Intensity of experience of FOC, is influenced also by the quality of communication and support from healthcare personnel (midwives, nurses, gynaecologists, obstetricians, and therapists) (Klabbers et al., 2016). Significant attention should be paid to pregnant women and their childbirth-related fears, particularly with regard to midwifery care, as FOC can have unfavourable consequences on both pregnancy and the course of labor. Intense feelings of anxiety can have a negative influence on the course of labor, for instance, increasing the duration of the first period of labor. There is evidence to suggest that women experiencing intense fear are at greater risk of requiring acute caesarean section in comparison to women who do not experience FOC (Adams, Eberhard-Gran, Esklid, 2012). Other studies have indicated that FOC among multiparas is a factor in an increased ratio of caesarean section by request (Mancuso et al., 2006; Sydsjö et al., 2012; Räisänen et al., 2014; Fenwick et al., 2015). In Finland, Sweden and the United Kingdom, FOC is the main reason for caesarean section in 7–22% of all labors. (Rouhe et al., 2011). Childbirth-related fear could also be a significant pathogenic factor in postpartum depression (Jaju, Al Kharusi, Gowri, 2015; Song, Yu, 2015).

In light of the above, it is necessary to focus on not only physical, but also psycho-social factors, including intense feelings of anxiety related to labor, in order to provide effective and high quality healthcare to pregnant women.

Aim

The aim of the study was to explore the intensity of childbirth-related fear among pregnant women, its components, and associations with selected variables (age, childbirth history, parity, and trimester).

Methods

Design

A quantitative cross – sectional study was used.

Sample

The cohort consisted of women that had fulfilled the following inclusion criteria: pregnant, willing to cooperate, and provision of written consent. The average age of respondents was 29.66 years. The youngest respondent was 18 years-old, and the oldest was 42 years-old. The characteristics of the cohort (n = 156) with regard to the determined factors (parity, subjective experience of previous labor, and trimester) are presented in Table 1.

| Characteristic (n = 156) | n (%) |
|-------------------------|-------|
| Parity                  |       |
| primigravidity          | 82 (52.56) |
| secundigravidity        | 47 (30.13) |
| multigravidity          | 27 (17.31) |
| Experience of last labor|       |
| complicated             | 30 (19.23) |
| non-complicated         | 42 (26.92) |
| i cannot assess it      | 2 (1.28) |
| primigravidity          | 82 (52.56) |
| Trimester               |       |
| 1st trimester           | 20 (12.82) |
| 2nd trimester           | 39 (25.00) |
| 3rd trimester           | 97 (62.18) |

Data collection

The standardized questionnaire Wijma Delivery Expectancy/Experience Questionnaire version A (W-DEQ version A) was used (Wijma, Wijma, Zar, 1998), and translated into Slovak by reverse-translation. The questionnaire focused on the measurement of the intensity of childbirth-related fear. It consists of 33 questions in six domains. Each question is scored according to a six-point Likert scale. The total score of the questionnaire indicates the intensity of fear of childbirth, ranging from 0 to 165. The higher the final value, the higher the intensity of childbirth-related fear. A value of 85 or more indicates significant childbirth-related fear. The internal consistency reliability (the Cronbach alpha reliability) coefficient of the W-DEQ A in this research was 0.645.

In addition to the standardized questionnaire, we used a one-item question focusing on the components of fear of childbirth. This item provides eight possible answer variants, with the option of choosing more than one answer. A pilot study was conducted on five female respondents. The pilot study led to modifications to the problematic wording of certain items. Data collection was carried out from October 2015 to February 2016. The method of convenient sampling was used. Participants (pregnant women) were recruited at three obstetrical outpatient clinics. Respondents who agreed to participate in the research project were asked to complete the questionnaires during their visit to the outpatient clinic, or they could choose to participate online, in which case, an electronic form of the questionnaire was sent to the email addresses provided by the participants. A total of 192 questionnaires were distributed: 120 questionnaires in person, and 72 by email. The response rate was 90.63% in the group of participants who completed questionnaires during their visit to the clinic, and 73.61% in the group of women who sent...
questionnaires by email. The overall response rate was 81.25%.

Data analysis
To analyse the data, descriptive statistics, Spearman correlation coefficient, ANOVA, and a linear regression method were employed. Statistical analyses were performed using IBM SPSS, version 22. The result of analysis was considered statistically significant if the p-value of the test was less than 0.05 (p < 0.05).

Results
Table 1 shows the characteristics of research participants in terms of parity, trimester and the subjective perception of their last labor. 52.56% of participants were primiparas, 30.13% secondiparas, and 17.31% multiparas. 12.82% of respondents were in the first pregnancy trimester, 25.00% in the second trimester and 62.18% in the third trimester. With regard to the subjective perception of previous labor, 26.92% of respondents described their last labor as without complication, 19.23% as complicated and 1.28% stated that they were not able to evaluate their last labor.

Table 2 depicts the average intensity of childbirth-related fear. The average intensity of childbirth fear among participants was 68.74 (SD 11.58). A high level of childbirth fear (W-DEQ ≥ 85) was identified among 15 women (9.61%).

Table 2 Mean levels of childbirth-related fear in research sample

| n (%)     | mean (SD) |
|-----------|-----------|
| W-DEQ <85 | 141 (90.38) 66.40 (9.37) |
| W-DEQ ≥ 85| 15 (9.61)   90.80 (5.60) |
| Total sample | 156 (100)   68.74 (11.58) |

SD – standard deviation

Table 3 Childbirth-related fear among women acc. to previous labor complication, parity, and trimester

| n (%)    | mean (SD) | F*  | p  |
|----------|-----------|-----|----|
| Complicated labor | 30 (19.23) | 71.83 (11.97) | 4.58 | 0.004 |
| Non-complicated labor | 42 (26.92) | 63.39 (11.34) |     |    |
| Primigravida | 82 (52.56) | 70.41 (11.12) |     |    |
| Secundigravida | 47 (30.12) | 68.21 (11.97) |     |    |
| Multigravida | 27 (17.30) | 64.70 (12.04) | 2.56 | 0.080 |
| 1<sup>st</sup> trimester | 20 (12.82) | 73.25 (13.19) |     |    |
| 2<sup>nd</sup> trimester | 39 (25.00) | 69.38 (10.88) |     |    |
| 3<sup>rd</sup> trimester | 97 (62.18) | 67.56 (11.38) | 2.11 | 0.130 |

F* – ANOVA; p – significance level at p < 0.05

A linear regression model was used to examine the effect of selected variables on the level of childbirth-related fear among study participants. Age, trimester, parity, and previous labor were entered as possible predictors in the linear regression model, while level of fear was treated as a dependent variable. The results of this analysis showed that parity and previous labor were both statistically significant.
(β = -2.26; p ≤ 0.05; resp. β = -2.06; p ≤ 0.05). Age and trimester were not found to be significant factors influencing the fear of labor in this model. The total explained variance in the linear regression model was 7.91% (Table 4).

**Table 4** Linear regression model with the effect of variables on the level of childbirth-related fear among study participants

| Variable                  | β coefficient | p-level |
|---------------------------|---------------|---------|
| Age                       | -1.04         | 0.301   |
| Trimester                 | -1.55         | 0.123   |
| Parity                    | -2.26         | 0.025   |
| Previous labor            | -2.06         | 0.041   |
| Total explained variance  |               | 7.9%    |

Table 4: Linear regression model with the effect of variables on the level of childbirth-related fear among study participants. The table shows the coefficients and p-values for the regression model. The total explained variance in the model is 7.91%.

Table 5 shows the components of childbirth-related fear. As women had the option of choosing more than one response, the total number of answers in the table below is 307. Pregnant women in the research sample defined the specific components of their childbirth-related fear as follows: pain (21.17%), long duration of labor (19.21%), use of forceps or vacuum-extraction during labor (17.59%), perineal injury (14.65%).

**Table 5** Components of childbirth-related fear

| Component                              | n (%)        |
|----------------------------------------|--------------|
| Pain                                   | 65 (21.17%)  |
| Prolonged labor                        | 59 (19.21%)  |
| Panic and loss of control during labor | 21 (6.84%)   |
| Feeling of incapability and incapacity | 14 (4.56%)   |
| Perineal injury                        | 45 (14.65%)  |
| Incorrect method of pushing and breathing| 19 (6.19%)  |
| Late arrival to maternity hospital     | 2 (0.77%)    |
| Fear of C-section                      | 28 (9.12%)   |
| Fear of using forceps and vacuum-extractor | 54 (17.59%) |
| Total number of responses              | 307 (100.00%)|

**Discussion**

One of the aims of this study was to examine the intensity of childbirth-related fear in a research sample of pregnant women in Slovakia. Significant childbirth-related fear was identified in almost 10% of women participating in the study. Research studies focusing on intensity of childbirth-related fear show a variation in proportion of significant FOC in particular countries. A review study carried out in 2009 in Norway reported a 15.8% prevalence of serious FOC (Nieminen, Stephansson, Ryding, 2009). However, according to another, more recent study carried out in 2011 in Norway, serious FOC was identified in 8.8% of women (Størksen et al., 2012). Serious FOC was found in 4.5% of women in Belgium; 7.6% in Island, 15.2% in Sweden, and up to 15.6% in Estonia (Schei et al., 2014). In Canada, a 9.2% prevalence was found (Spice et al., 2009). Prevalence of FOC in West-European countries was approximately 20%, and 6-10% of women suffered from intense childbirth-related fear that had an impact on their daily life (Kjærgaard et al., 2008). Identification of FOC predictors has direct implications for midwifery practice, especially in the context of childbirth-related fear as a nursing diagnosis. Consequently, we were interested in factors related to high levels of FOC, such as age, parity and previous experience of labor.

The results of our study showed a significant association between higher age and higher levels of childbirth-related fear in the research sample. This is in line with the results of Räisänen et al. (2014), and Gao et al. (2015). Comprehensive psycho-prophylaxis plays a significant role in decreasing childbirth-related fear among primiparas, and should be given proper attention in midwifery practice (Navaee, Abedian, 2015). Childbirth-related fear might also be one of the factors associated with the highly prevalent current trend of postponing maternity to a later age among woman in highly developed countries.

Previous labor experience and its relationship with FOC were also examined in this study. The results show that the average intensity of fear of childbirth by primiparas was significantly higher in comparison to multiparas, which is in line with the study by Rouhe et al. (2009), who also found that fear of childbirth is influenced by parity. Among primiparas, the fear of the unknown might be a significant factor influencing FOC, while among multiparas, the level of FOC is significantly influenced by previous labor experience (Nieminen, Stephansson, Ryding, 2009). Previous childbirth experience among pregnant women may be associated with labor trauma, and might make a significant contribution to their experience of childbirth-related fear (Nilsson, Bondas, Lundgren, 2010). The results of analysis of variance reveal significant differences in the intensity of FOC among women with complicated and non-complicated previous labor. The level of FOC intensity among women who perceived their labor to be complicated was higher than the level of FOC among women with non-complicated previous labor.

However, there was no statistically significant difference between women with complicated labors and primiparas. Other studies have also demonstrated the influence of parity and previous labor experience (complicated labors: instrumental vaginal labor,
C-section labor) on risk of experiencing FOC (Nieminen, Stephansson, Ryding, 2009; Rouhe, 2009; Elvander, Cnattingius, Kjerulff, 2013; Toohill et al., 2014). It has been suggested that FOC during pregnancy could negatively influence experience of labor (Sluijs, 2012). Analysis of fear of childbirth components revealed the most frequent reasons for FOC in the research sample. The most common answer was labor pain (21.17%), prolonged labor (19.21%), use of forceps or vacuum extraction (17.59%), and perineal injury (14.65%). Pain was also identified as the most frequent component of childbirth-related fear among pregnant women in a study by Gosselin et al. (2016). According to a study by Leap et al. (2010), the ability to cope with labor pain among pregnant women is significantly influenced by the support of midwives during pregnancy and labor, based on the relationship of trust established during psycho-prophylactic courses. In this study, the ability to overcome worries, self-doubts, and the pain experienced in childbirth have resulted in feelings of pride, happiness, and positive stimulation after labor.

In the linear regression model in our study, parity and previous labor experiences were shown to be significant predictors of labor fear. This indicates that being a primipara, or perceiving a previous labor as complicated, were the most significant factors influencing childbirth fear in our sample. However, the total explained variance in the linear regression model was low, meaning that other factors probably influence the level of childbirth fear among women. Psychosocial characteristics such as socioeconomic status, depression and anxiety, and personality traits, might be significant in this regard.

Pregnant women with high levels of childbirth-related fear require effective support during pregnancy and labor. By using appropriate attitude-focused strategies, healthcare personnel could significantly contribute to the prevention and reduction of childbirth-related fear. During labor, an intimate, calm, and friendly atmosphere, with emphasis on an individual approach is vital in providing a comfortable and secure environment for pregnant women. This requires the creation of a strong and positive relationship between pregnant women and healthcare professionals by means of effective communication, full acceptance, empathy, support, appreciation, and respect (Sydsjö et al., 2015). The positive effect of psycho-prophylaxis on reducing FOC among women has also been demonstrated in other studies (Karabulut et al., 2016; Kızılırmak, Başer, 2016; Serçekuş, Başkale, 2016). Based on the results of this study, we regard it as vital to significantly improve education of healthcare personnel in the area of psychology, psychotherapeutic communication, prevention, and fear-coping mechanisms. Screening measures focused on identifying pregnant women at risk of experiencing FOC should be used in obstetrician and midwifery practice to a greater extent. Regular supervision and basic psychotherapeutic education are also options for strengthening effective interventions targeted at reduction of childbirth-related fear.

Limitations of study

Certain limitations were inherent in the nature of the research (i.e., online questionnaires, conventional sampling process, the number of respondents). The study did not allow causal conclusions, and its external validity is limited. Notwithstanding these methodological limitations, the study focused on a topic rarely explored in the region of Central and Eastern Europe.

Conclusion

This study identified factors associated with higher levels of childbirth-related fear among pregnant women in Slovakia (higher age, previous negative labor experience, and being a primipara), as well as the most frequent components of childbirth-related fear. Paying greater attention to the predictors of FOC could help in the process of identifying women at higher risk of intense childbirth-related fear, and thus improve the effectiveness of intervention strategies. Prevention and reduction of childbirth-related fear, especially as part of psycho-prophylaxis, could contribute to more effective labor courses and quality of life among pregnant women.

Ethical aspects and conflict of interest

Our study complies with standard ethical rules. The study was approved by the local Ethics committee of the Žilina region (Slovak Republic), and all participants received information about the study aims, and details about their participation. The data collection was anonymous, and all participants expressed their willingness to be included in the study. The authors declare that they are not aware of any conflict of interest.

Author contribution

The concept and study design (LM, ZS, SK), data analysis and interpretation (LM, ZS, SK, AR), processing the draft of the manuscript (LM, ZS, SK),
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