

Fear of childbirth in pregnant women: External and internal factors

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Fear of childbirth (FOC) is an important psychological problem that is studied worldwide because it affects the well-being of pregnant women. However, in Russia, this problem does not receive adequate attention among researchers. The purpose of the present study was to investigate the conditionality of fear of childbirth (FOC) in pregnant women by external and internal factors, which we assumed were the reasons for this fear. As external factors, we considered socio-demographic indicators (e.g., age, marital status, level of education, housing, and the attitude of relatives towards pregnancy) as well as indicators of gynecological history (e.g., the term of pregnancy, the outcome of previous pregnancies, and pregnancy complications). As internal (psychological) factors of the fear of childbirth, we considered personal anxiety as well as general inclination towards and negative consequences of different fears (20 types of fears and phobias were examined). The study was conducted with a Russian sample of 76 women at different stages of pregnancy and with different socio-demographic indicators and gynecological histories. The analysis of the results showed the absence of significant differences between women who were pregnant with FOC and those without this fear in terms of the external factors considered in this study. According to the study's data, a general inclination of women to fear is associated with fear of childbirth. However, the findings for the women with FOC did not indicate significant positive correlations between the level of this fear and exposure to any of the 20 types of fear and phobias measured in the study. Furthermore, the results did not detect relationships between the FOC level and women's personal anxiety. The results allow us to conclude that FOC is a separate phenomenon that is not dependent on other phobias and fears. Fear of childbirth has a subjective and highly individual genesis. It is not a direct consequence of objective factors, and it cannot be predicted based on women's personal characteristics (in particular, anxiety). For further study of this problem, we suggest that researchers identify different types of FOC and describe their content as a way to help develop practical methods of providing psychological assistance for women during pregnancy.

Keywords: fear of childbirth (FOC); pregnancy; personal anxiety; fears; phobias

Introduction

Fear of childbirth (FOC) is an important issue affecting the well-being of pregnant women and their children. It complicates the support of the pregnancy and prevents the normal flow of deliveries. According to studies conducted in different countries, approximately 20 to 80 per cent of pregnant women experience varying levels of FOC, and the incidence of FOC has increased over time. Research also highlights a paradoxical situation: with the improvement of modern delivery capabilities, fear of childbirth remains a major source of stress and leads some women to end their pregnancy or avoid natural childbirth through analgesics or caesarean section (Körükçü, Firat, & Kukulü, 2010; Searle, 1996; Zar, Wijma, & Wijma, 2002). The birth of a child can represent an objective risk, which is associated with such factors as the woman's physical well-being and pregnancy complications. However, it is often the case that fear of childbirth occurs without any objective danger. FOC can complicate the delivery process. For example, it can result in a prolonged childbirth and cause psychological problems after the birth of a child, for example, postpartum depression and birth trauma with possible post-traumatic stress disorder (PTSD) (Ayers, 2014; Bahl, Strachan, & Murphy, 2004; Bewley & Cockburn, 2002; Hildingsson et al, 2002; Johnson & Slade, 2002; Ogrodniczuk, 2004; Ryding, Persson, Onell, & Kvist, 2003). Tyutyunnik, Mikhailova & Chuhareva (2009) indicate that emotional fluctuations are dangerous not only for the pregnant woman but also for her unborn child. When a pregnant woman experiences stress, her body produces more cortisol. This adversely affects the immune system of pregnant women and adversely affects the health of the unborn child. Chronic stress over the course of a few weeks may slow fetal development and result in future problems in raising the child.

For pregnant women with childbirth fear, the value of psychological prenatal accompaniment is higher (Hofberg & Ward, 2003; Toohill, Fenwick, Gamble, Creedy, Buist, Turkstra, & Ryding, 2014). The study of Eriksson et al. (2006) indicates that socially constructed norms and expectations may influence the pregnant women's feelings in relation to childbirth. Thus, training women to have positive perceptions of childbirth and proper behavior during childbirth may be helpful. Nilsson & Lundgren (2009) also conclude that for women with FOC, the quality of their interaction with medical staff is very important. Prenatal training for women is a common practice; however, fear of childbirth often prevents adequate communication between a midwife and a pregnant woman. Fear of childbirth requires a special approach in working with pregnant women; therefore, it is necessary to understand the reasons for its occurrence as well as the content of this feeling among pregnant women (Fisher, Hauck, & Fenwick, 2006; Hildingsson, Nilson, Karlstrom, & Lundgren, 2012; Faisal, Matinnia, Hejar, & Khodakarami, 2014).

Pregnant women have a varied content of FOC. It was found that the most common contents of FOC are worries and concerns about the well-being of the baby, the health of the unborn child, women's own health and wellbeing, the pain of contractions, congenital abnormalities and possible medical interventions (Searle, 1996; Szeverenyi, Poka, Hetey, & Torok, 1998).

There have been many studies of FOC predictors, and these studies have reached different conclusions. Fisher et al. (2006) argued that fear of childbirth has social as

well as personal dimensions and is both a prospective and retrospective phenomena. Their study identified two main factors that reduce childbirth fear: positive relationships formed with midwives and the support women received from their informal network. The treatment of pregnant women by medical staff affects the content of women's personal experiences, which can be a condition of childbirth fear. Nilsson et al. (2010) note that the previous childbirth experiences of pregnant women with intense fear of childbirth have a deep influence and can be related to suffering and birth trauma.

However, according to Alehagen et al. (2006), negative personal experience of suffering is not necessarily a factor influencing FOC. Researchers did not find differences in the content of FOC among women who received epidural analgesia during labor pains and those who did not use analgesia. Moreover, pregnant women who received epidural analgesia in previous childbirth usually have a higher level of FOC. On the other hand, a number of studies have identified that the most common reason for fear was the lack of trust in the obstetric staff. The common reasons for FOC were worries about unfriendly obstetric staff, being left alone, appearing silly and not being involved in decisions (Melender, 2002; Nilsson & Lundgren, 2009; Saisto & Halmesmaki, 2003). Nilsson & Lundgren (2009) considered that the experience in which fear of childbirth does not develop represents active inclusion of women in this process and discharges their natural role in childbirth.

The study of Zakharova & Bulusheva (2009) identified connections of FOC with the characteristics of family relationships: affection of the pregnant woman for her mother and features of marital relations (e.g., the emotional intimacy of spouses, clarity or confusion of family roles, and the distribution of responsibilities). It has been shown that women with a low degree of affection for their mother are more inclined to fear a change in marital relationships and to fear loneliness, and women with a high degree of affection for their mother are often fearful and do not cope well with the forthcoming childbirth and motherhood without special assistance.

Research also focuses on the influence of personal factors on the emergence of fear of childbirth: anxiety, depression and phobic disorders. Pre-existing anxiety disorders may intensify when women become pregnant (Jokic-Begic, Zigic & Rados, 2014). Körükcü et al. (2010) used a sample of 660 healthy women with normal pregnancies and found that there was a significant relationship between fear of childbirth and anxiety. The study of Spice et al. (2009) found that higher levels of anxiety sensitivity — physical concerns, higher trait anxiety, and expecting a first child — all independently predicted a greater FOC. The authors also suggest that FOC can be associated with other fears. However, the survey of 506 pregnant women by Zar et al. (2002) showed no significant relationship of FOC with specific types of anxiety disorders. The study of Storksen et al. (2012) showed that anxiety and depression increased the prevalence of childbirth fear, although the majority of women with fear of childbirth had neither anxiety nor depression.

We agree with the position of Wijma et al. (2002) that personal and external conditions play a major role in generating childbirth fears and concerns. Most current studies focused on separate factors associated with FOC do not provide a holistic view of the phenomenon. The aim of our research was to apply the integrated approach to identify factors of FOC in pregnant women.

To realize this approach, we divide the spectrum of factors that can lead to fear of childbirth into «external» and «internal» groups. As for «external» factors, we also divide them into two parts. The first group of factors is «objective» reasons, i.e., those circumstances based on medical or statistical data that can greatly complicate the delivery or make it more dangerous. The second group of external factors is composed of the social conditions that affect a woman's perception of pregnancy, delivery and motherhood. This could include the level and nature of education, relationships with their family and friends, and an enabling environment for the implementation of maternal functions (marriage, housing and income), that is, those factors that do or do not provide a sense of confidence and security. In this group of factors, we also consider the term of pregnancy associated with the approaching birth, a potentially frightening situation, and the negative experience of the previous birth. Internal (personal) reasons, in accordance with the available data, include such important factors of FOC as personal anxiety, fears and phobias, which can develop into fear of childbirth during pregnancy and anticipation of delivery.

The study is based on the following hypotheses:

1. Fear of childbirth is stronger and appears more often when the expectation of objective problems during childbirth is higher because of the following factors: older age of the pregnant woman, complications and health problems during pregnancy, problems in previous pregnancies.
2. Fear of childbirth is associated with factors that contribute to a sense of uncertainty and insecurity among pregnant women: “not married” status, lack of vocational education, unwanted pregnancy, and relatives’ negative attitude towards the pregnancy.
3. Fear of childbirth is stronger for women with a higher anxiety level.
4. Fear of childbirth is a common way in which fears and phobias are exposed and actualized during pregnancy.

Methods

We developed a questionnaire consisting of open- and closed-ended questions to discover the external factors associated with the emergence of fear of childbirth. Some questions fix the following socio-demographic variables: age, marital status, education, housing, job, expected or unexpected pregnancy, and attitude of close people (family) towards the pregnancy. Other questions fix the following obstetrical and gynecological history: the duration of this pregnancy, previous pregnancies and presence of complications in the pregnancy.

We used a modified variance of “The hierarchical structure of the topical fears of personality”, which was questionnaire designed to examine healthy persons (Scherbatyih, 2002), and the “Scale for self-evaluation of personal anxiety” questionnaire (Russian version of H. Spilberger’s questionnaire adapted by Y. Hanin) (Kostina, 2006) to identify internal factors of fear of childbirth. These questionnaires allowed us to test assumptions about the effects of anxiety as an intrinsic factor, which can be a predictor of FOC; the relationship of FOC with a total exposure of a woman to fears (phobias); and the relationship of FOC with certain types of fears and phobias.

Modification of “The hierarchical structure of the topical fears of personality” questionnaire consisted of the exclusion of issues relating to certain types of fears, which we felt were not relevant to the objectives of this study (e.g., fear of superiors, fear of war, fear of public speaking, and fear of suicide), and the inclusion of fear of childbirth. As a result, the questionnaire focuses on the identification of 21 types of fear:

- 1 – Fear of spiders and snakes;
- 2 – Fear of darkness;
- 3 – Fear of insanity;
- 4 – Fear of illnesses of loved ones;
- 5 – Fear of crime;
- 6 – Fear of changes in one’s personal life;
- 7 – Fear of liability;
- 8 – Fear of old age;
- 9 – Fear of a heart attack;
- 10 – Fear of poverty;
- 11 – Fear of the future;
- 12 – Fear of exams;
- 13 – Fear of death;
- 14 – Fear of confined spaces;
- 15 – Fear of heights;
- 16 – Fear of depth;
- 17 – Fear of the negative consequences of the illnesses of loved ones;
- 18 – Fear of contracting any disease;
- 19 – Fear associated with sexual function;
- 20 – Fear of childbirth;
- 21 – Fear of aggression towards close people.

In this questionnaire, the “hierarchy of fears” is applied to identify the representation of fear of childbirth in the total structure of fears and their interrelation. Respondents scored each item of this questionnaire on a 10-point Likert-scale. The points each pregnant woman assigned for each type of fear and the integral indicator of exposure to fears (sum of the points for all items) were considered in the diagnostics. An average integral component of this questionnaire was 90.5 points. We considered a numerical score for fear of 20 to be the measure of fear of childbirth (the average is 5 points).

We used Fischer’s angular transformation criterion φ^* to study differences in external factors (socio-demographic indicators and detailed anamnesis) among women with various expressions of fear of childbirth. The connection between the presence of fear of childbirth and general exposure to fears among pregnant women was determined by using Pearson’s tetrachoric correlation coefficient (Phi-coefficient). Pearson linear correlation coefficients examined the connections between different types of fears proposed in “The hierarchical structure of the topical fears of personality” questionnaire; personal anxiety and fear of childbirth were calculated with Microsoft Excel.

Participants

Seventy-six women at different stages of pregnancy registered at one of the maternal centers of Kazan, Russia, participated in the study. The pregnant women involved in the study ranged in age from 20 to 36 years old, and the average age was 25.5 years old. All women participated in the survey on a voluntary basis; the questioning was conducted anonymously. The gynecological midwife that accompanies these women during their pregnancy assisted with the data collection. Thirty-two of the 76 women interviewed had experienced fear of childbirth above the average level.

Results

For the frequency analysis, data on the “external” factors of the participants were divided into two groups according to the self-assessment of FOC expressiveness. The first group of pregnant women who did not experience FOC (from 1 to 5 points) included 44 women (57,9 %), and the second group of participants, whose

Table 1. Differences between pregnant women having and not having fear of childbirth in the frequency of socio-demographic and pregnancy history variables

Variables	Fear of childbirth is not expressed, N=44		Fear of childbirth is expressed, N=32		φ^*_{emp}
	n ₁	%	n ₂	%	
Age					
Younger than 25 years old	21	51.2	20	48.8	1.282
Above 26 years old	23	65.7	12	34.3	
Education level					
General secondary education and students	10	45.5	12	54.5	1.396
Secondary and higher professional education	34	63.0	20	37.0	
Marital status					
In marriage	32	57.1	24	42.9	0.226
“Not married” or cohabitation	12	60.0	8	40.0	
Attitude to pregnancy of relatives					
Positive, the pregnancy was expected	35	55.6	28	44.4	0.926
Negative or indifferent	9	69.2	4	30.8	
Evaluation of housing conditions					
The conditions are “good” and “normal”	36	55.4	29	44.6	1.113
The conditions are “not satisfactory”	8	72.7	3	27.3	
History of pregnancy					
First pregnancy	34	58.6	24	41.4	0.226
Repeated pregnancy	10	55.6	8	44.4	
Miscarriages, abortion in past pregnancies	15	75.0	5	25.0	0.3
Complications of the pregnancy	12	70.6	5	29.4	
The term of pregnancy					
Up to 30 weeks	31	64.6	17	35.4	1.548
Above 30 weeks	13	46.4	15	53.6	

fear of childbirth was expressed above average (from 5 to 10 points), included 32 women (42,1 %). The values of Fischer's angular transformation criterion φ^* reflect the quantitative differences between the pregnant women experiencing fear of childbirth and those not affected by this fear for socio-demographic indicators and obstetric-gynecological history (Table 1). The statistics in Table 1 do not show significant differences between pregnant women affected by fear of childbirth and those not experiencing this fear in relation to any "external" variables included in the analysis. Thus, the analysis has disproved the hypothesis of any external factors impacting on the manifestation of fear of childbirth. It suggests that fear of childbirth has some deep subjective causes.

The general exposure of women to fears was considered among the internal factors of fear of childbirth. To determine the relationship between these parameters, the sample of 76 women was divided into four parts. Among women who do not have fear of childbirth (44 women), according to the integral indicator of "The hierarchical structure of the topical fears of personality" questionnaire, 30 are not inclined towards fear and 14 are inclined towards different types of fear. Among women who have fear of childbirth (32 women), five are not inclined towards fear and 27 are inclined towards different types of fear. The data analysis was conducted with the use of Pearson's tetrachoric correlation coefficient (Phi-coefficient φ) (Table 2).

Table 2. The relationship between the manifestation of fear of childbirth and general tendency towards fear

Groups	Women are not inclined to fears	Women are inclined to fears	Total
FOC is not expressed	30	14	44
FOC is expressed	5	27	32
Total	35	41	76

$\varphi = 0,6; p \leq 0,01$

According to the information obtained, the expression of fear of childbirth and the general tendency of pregnant women to fear have a strong direct relationship ($\varphi = 0.6; p \leq 0.01$). Therefore, fear of childbirth could be regarded as one of the manifestations of women's susceptibility to phobias and fears.

The study also analyzed connections between personal anxiety and susceptibility to fear and the intensity of fear of childbirth among the 32 sampled women who expressed FOC. For this purpose the variables of personal anxiety from the questionnaire of Charles Spielberger - Yu. Hanin and values of the separate scales of "The hierarchical structure of the topical fears of personality" questionnaire were compared with the level of intensity of fear of childbirth through correlation analysis (linear Pearson correlation) (Table 3). Preliminary data normalization using Excel was performed.

The statistics presented in Table 3 show weak inverse relationships between FOC and fear of darkness ($r = -0.5; p \leq 0,05$) and fear of aggression towards close people ($r = -0.3; p \leq 0.1$). Thus, we can conclude that FOC is not the derivative of any types of fear. FOC is an independent phenomenon that exists regardless of the person's other fears. We also did not establish a significant correlation of FOC with

the indicator of personal anxiety. This result disproves the working hypothesis that FOC is based on a personal predisposition to anxiety that develops into the fear of childbirth during pregnancy.

Table 3. The correlation of fear of childbirth (FOC) expression with the expression of other fears proposed by “The hierarchical structure of the topical fears of personality” questionnaire (** — $p \leq 0.05$; * — $p \leq 0.1$)

Variables: types of fear and personal anxiety	FOC
1 – Fear of spiders and snakes;	-0.00
2 – Fear of darkness;	-0.47 **
3 – Fear of insanity;	-0.18
4 – Fear of illnesses of loved ones;	0.01
5 – Fear of crime;	0.22
6 – Fear of changes in one’s personal life;	-0.17
7 – Fear of liability;	-0.04
8 – Fear of an old age;	-0.10
9 – Fear of a heart attack;	0.03
10 – Fear of poverty;	-0.11
11 – Fear of future;	-0.21
12 – Fear of exams;	-0.20
13 – Fear of death;	-0.23
14 – Fear of confined spaces;	-0.05
15 – Fear of heights;	0.25
16 – Fear of depth;	0.11
17 – Fear of negative consequences of illnesses of loved ones;	0.07
18 – Fear of the contracting any disease;	0.06
19 – Fear associated with sexual function	-0.00
21 – Fear of aggression towards close people	-0.32 *
Indicator of personal anxiety	-0.16

The content of FOC was identified through the analysis of the responses of women with FOC to the closed-ended question “Which factors cause your fear of childbirth and how much?”. The subjective components of fear of childbirth had the following rankings based on the number of points assigned to each component by the sampled women:

1. Fear for the child’s life and health (102 points);
2. Fear of physical pain (78 points);
3. Fear for their own lives and health (72 points);
4. The absence of any experience (62 points);
5. Another’s negative experience (55 points);
6. Previous own negative experience (45 points).

The ranking indicates that the own-experience factors related to the causes of the emergence of childbirth fear were considered the least significant in the minds of women with FOC. The highest ranked factors of the FOC components are those for

which women do not have direct experience, including the fear of possible problems associated with the delivery. That is, we can conclude that the main reasons for the formation of fear of childbirth are unrelated to objective problems and personality characteristics of pregnant women and are instead rooted in the subjective perception of the risks associated with childbirth in a social context. However, women are prone to internalization of cultural ideas that childbirth as a dangerous phenomenon and to formation of corresponding phobia in varying degrees. This suggests that we can distinguish between different types of content and subjective reasons for FOC in pregnant women. This issue will be discussed in the next paper.

Discussion

In this study, the manifestation of fear of childbirth occurred in approximately 42% of the sample of pregnant women. This result corresponds to statistical data presented in other studies, despite the fact that the identification of fear of childbirth was obtained using different methods (Körükcü, Firat, & Kukulcu, 2010; Zar, Wijma, & Wijma, 2002). In our study, fear of childbirth was detected based on the subjective evaluation of women, while other authors used special tools - Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ). This suggests that women who experience fear of childbirth are adequately aware of its presence and the power of its manifestation. However, they do not recognize fear of childbirth objectively.

We cannot distinguish a certain “group at risk” among pregnant women based on external factors that would enable us to pay adequate attention to these women during prenatal preparation. According to the results of this study, any woman can have a manifestation of fear of childbirth, regardless of their age, past experience, social status, or existing health problems. This conclusion corresponds to the results of the Alehagen et al. (2006) study that also established that negative experiences during previous pregnancies had no effect on fear of childbirth. Our conclusion about the absence of the relationship of FOC and age of the pregnant woman corresponds with other studies that found that the age range of women experiencing fear of childbirth varies from 15 to 45 years old (Fisher, Hauck, & Fenwick, 2006; Körükcü, Firat, & Kukulcu, 2010; Nilsson & Lundgren, 2009; Zar, Wijma, & Wijma, 2002). However, our data do not correspond with the data of Heimstad et al. (2006) that nulliparous women report higher levels of fear of childbirth than parous women. This divergence can be explained by the fact that our study analyzed the frequency of occurrence of fear of childbirth by nulliparous and parous women, but not the intensity of this fear. The independence of FOC from external factors indicates its subjective nature.

The suggestion about the relationship of FOC with a common exposure of fear was based on the view that fear of childbirth is a variant of phobic personality disorder, especially in its strong expressiveness. In particular, Zar et al. (2002) expressed the opinion that “...a more thorough investigation of extreme fear of childbirth as a possible ‘childbirth phobia’ is needed and is important for both theoretical reasons and clinical practice”. However, we found that fear of childbirth is manifested regardless of other types of fears and phobias and is not linked to the level of personal anxiety measured by the questionnaire of Charles Spielberger — Yury Hanin. At the same time, researchers applying other tools for measuring symptoms of anxiety, anxiety disorders and fear of childbirth found connections among them (Körükcü,

Firat, & Kukul, 2010; Spice et al. 2009). Our result corresponds with the study of Zar et al. (2002), who found no significant interrelations of fear of childbirth with certain types of anxiety disorders. However, we believe that the impact of the level of anxiety on the development of FOC requires additional research.

The variants of subjective constituents of the FOC content identified in this study coincide with the data obtained on samples from different countries (Fisher, Hauck, & Fenwick, 2006; Melender, 2002; Nilsson & Lundgren, 2009; Searle, 1996; Saisto & Halmesmaki, 2003; Szeverenyi, Poka, Hetey, & Torok, 1998). It could be argued that there are no cultural differences in the FOC content. However, in this study, the hierarchy of attitudes and perceptions that constitute fear of childbirth has been identified. Our data showed that for pregnant women, the more significant components of the FOC content are not available in real-time and in their direct life experiences. According to its FOC value, the setting related to the actual causes of fear of childbirth from their own life experience is least important among women with FOC. This result corresponds with the conclusion of Alehagen et al. (2006) that the previous experiences of parous women do not have a significant impact on fear of childbirth. In addition, these data support the conclusion of Fisher et al. (2006) regarding the social nature of the origin of FOC. Women assimilate dangers associated with childbirth from their socio-cultural context. Individual differences in susceptibility to this effect are most likely connected with the same reasons for other fears.

Conclusion

The analysis of the collected data has refuted the hypothesis regarding the impact of external factors on FOC formation, for example, the term of pregnancy associated with the approaching birth, different ages for giving birth, or the presence of pregnancy complications. The study did not confirm the hypothesis regarding the relationship of fear of childbirth with personal anxiety, which could be a predictor of this phobia for pregnant women. Fear of childbirth is associated with general exposure to fears among women, but there is no direct relationship between the manifestation of FOC and individual exposure to fears and phobias.

Based on the data, we can conclude that fear of childbirth is a personality-related phenomenon that occurs not due to factors that objectively threaten women's health or well-being and does not arise out of negative personal experience. This fear often appears to be "far-fetched", and its expression for a woman is difficult to predict. At the same time, the connection of fear of childbirth with the general exposure to fears allows us to consider it as a type of phobic disorder. Because fear of childbirth has a large degree of variability, both in content and in expression, it makes sense to consider its different types. This will allow for a better understanding of its nature and causes and therefore will offer effective practical recommendations on the organization and content of pregnant women's prenatal preparation.

Limitations

The data contained in the present article represent the first part of the study of the content, type of display and factors of FOC occurrence among pregnant women. Further analysis reveals different types of fear of childbirth contents in the context of exposure to other phobias.

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