

Tocophobia: Risk Factors, Consequences and Management – A Systematic Review of the Literature

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ABSTRACT

Objective: As far as childbirth is concerned, it is well known that it constitutes a major life process for every woman. Many women experience negative emotions during pregnancy because of the normal hormonal changes. However, if fear becomes severe, it gives rise to a specific pathology termed tocophobia. Especially, tocophobia adversely affects women's pregnancy and childbirth, including increased caesarean sections. Consequently, midwives need to detect women with tocophobia in order to support them. The aim of the present systematic review was to analyze the risk factors for tocophobia, the impact of this health condition on caesarean sections and the midwife's role.

Materials and methods: The present systematic review comprised 32 full-text cross-sectional, qualitative, experimental studies and cohort studies published in English between 2017 and 2022, that were obtained from PubMed and Google Scholar databases, and it was conducted according to the PRISMA guideline.

Results: The present analysis found that sociodemographic, obstetric and psychological factors were associated with tocophobia. Moreover, women with severe fear had increased obstetric interventions, particularly caesarean sections. Studies have also shown that psycho-education, preparation classes and specific counselling by trained midwives are effective methods in reducing tocophobia.

Conclusions: Midwives should be aware of the risk factors for tocophobia in order to detect women with fears and support them in the attempt to avoid non-urgent obstetric interventions. Antenatal and intrapartum care should be offered to women with tocophobia to reduce their fear as well as the prevalence of caesarean section and to promote vaginal birth with a positive experience.

Keywords: tocophobia, risk factors, caesarean section, midwifery interventions.

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INTRODUCTION

Tocophobia, also known as fear of childbirth (FOC), is a condition in which women experience fears and worries in association with their pregnancy and childbirth. Although the etymology of tocophobia is unknown, there are recognized risk factors that make women more susceptible to fear. Nearly 14% of pregnant women suffer from FOC worldwide. Furthermore, related studies have shown that the prevalence of tocophobia was 10% in high income countries and 20-61% in undeveloped countries such as African ones (1). Also, in Australia, moderate fear affects 48% of women and severe fear 26% of them. The main sources of fear include episiotomy, loss of control, pain, future sexual life, fear of unprofessional or unkind medical staff and fear of having a caesarean section (CS) (2). Moreover, studies all over the world have reported that the causes and risk factors of tocophobia were different between individuals and countries. More specifically, sociodemographic and psychosocial characteristics, traumatic experiences in prior deliveries, previous miscarriages, low social and partner's support, unplanned pregnancy as well as lack of trust in the medical staff are certain reasons for the development of tocophobia (3).

Tocophobia is not a stable situation, but it varies during the trimesters with some women presenting increased fear in the third trimester (3). While there are no standard criteria for the diagnosis of tocophobia the Wijma Delivery Expectancy Questionnaire is the most commonly used tool for it (4). The lowest and the highest scores on the Questionnaire are 0-165, with the highest scores to mean severe fear (5). Women who experience high scores of fear, cannot manage the process of vaginal birth, leading to request for caesarean section (6). As a result, the percentage of caesarean sections has increased dramatically the recent years and a possible reason for this increase is the fear of a normal delivery (7). In addition, the fear of childbirth is associated with other complications, like post-term delivery, increased use of pharmacological pain relief, emergency cesarean section and negative birth experiences. It is significant for the midwives to be able to recognize the women with tocophobia in order to approach them suitably

providing efficient care and essential services to them (3).

As for the treatment of tocophobia, it is mainly unknown; our aim was to conduct a systematic review in order to provide the risk factors of fear and recognize the fearful women in good time. As a result, high risk women will be recognized and will receive special care, contributing to the reduction of tocophobia. □

MATERIALS AND METHODS

Protocol

The systematic review was performed via the preferred reporting items for systematic reviews (PRISMA) (8).

Figure 1 shows the PRISMA flow chart of the systematic review (Figure 1).

We have found fifteen studies discussing the risk factors of tocophobia, four studies associated with how FOC affects the caesarean section and thirteen studies discussing the birth outcome of women with tocophobia who received care from a midwife.

Eligibility criteria and study selection

We included full-text observational studies and clinical trials, which had full-text papers. Papers that did not fulfil the objective of our study were excluded. After the screening process, we included papers with the following features:

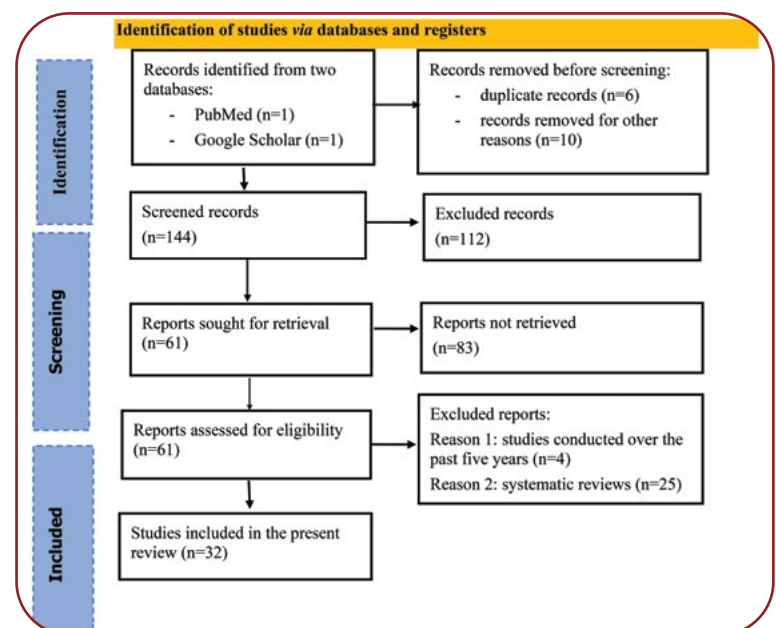


FIGURE 1. Evolution of ALT in the two groups during the 24 weeks of treatment

- (1) Full text papers
- (2) Patients: with fear of childbirth
- (3) Diagnosis: use of Wijma Delivery Expectancy Questionnaire
- (4) Effects of tocophobia: increase in caesarean sections
- (5) Management of tocophobia: midwifery education and care.

Database and search strategy

A systematic review was undertaken using a PubMed Database and Google Scholar search between 4 January 2017 and 15 January 2022. We searched through advanced strategy using the following terms: tocophobia, factors of tocophobia, request for caesarean section, and midwifery care.

Data extraction and analysis

We have collected the following information from each paper: the author’s year of publication, the number of women who participated, the selection of women, the method of data collection, the risk factors and the percentage of tocophobia, the preference for caesarean section, the midwife’s impact on tocophobia and the main conclusions. □

RESULTS

Study characteristics

Table 1 shows the methods of the studies that investigated childbirth fear and its risk factors for the systematic review (1-7, 9-16) (Table 1). Table 2 shows the methods of the studies which estima-

TABLE 1. Main characteristics of studies related to risk factors for tocophobia

Author, year of publication, reference	Country	Study design	Number of women	Outcomes-risk factors	Main conclusion
Gelaw T, <i>et al</i> (2020) (1)	Southern Ethiopia	Cross-sectional study	387	Unplanned pregnancy, complications in the current pregnancy, poor social support	Information about avoiding unplanned pregnancies, providing special management for high-risk women
Demšar K, <i>et al</i> (2017) (2)	Slovenia	Cross-sectional study	191	Anxiety, depression, lack of sexual activity	Depression is a better predictor than anxiety. Sexual activity before and during the current pregnancy is also a good predictor
Massae AF, <i>et al</i> (2021) (3)	Tanzania	Cross-sectional study	694	Deficient education, age over 30 years, nulliparous women, experience of obstetric complications, lack of support from the partner	It is significant to identify early, women who are at risk, to support them in reducing the consequences associated with tokophobia
Ilska M, <i>et al</i> (2021) (4)	Poland	Cross-sectional study	359	Unplanned pregnancies, preference for CS and previous psychiatric treatment	Many pregnant women with tocophobia prefer CS because of a lack of knowledge
Mortazavi F, <i>et al</i> (2018) (5)	Iran	Cross-sectional study	525	Preference for CS, low family income, low level of support from husband, physical activity <30 minutes/week, severe dyspareunia experienced in the first intercourse	Multiparous and nulliparous have different predictors of childbirth fear, but psychological factors influence both of them
O’Connell MA, <i>et al</i> (2019) (6)	Ireland	Cross-sectional study	882	Deficient informational support, depression	Women with low self-confidence can prefer CS. So, discussion, preparation for delivery and provision of information can help them.
Khwepwya M, <i>et al</i> (2018) (7)	Malawi	Cross-sectional study	305	Unemployment and experience of perineal tears are associated with moderate and severe fear.	Pregnant women are more likely to experience high levels of fear than postpartum women.
Onchonga D, <i>et al</i> (2020) (9)	Kenya	Cross-sectional study	376	Parity, absence of regular check-up, physical activity and participation in preparation classes	Women who are aware of their pregnancy reduce their fears.
Nguyen LD, <i>et al</i> (2021) (10)	Vietnam	Multicenter cross-sectional study	900	Concerns about physical changes and pain	No difference in FOC between nulliparous and multiparous women, which was different from other previous studies
Sluijs A-M, <i>et al</i> (2019) (11)	Netherlands	Cohort	331	Preference for hospital birth.	Women who preferred home birth but were referred to a hospital were confident and needed fewer interventions than those who wanted their labour to a hospital.
Asselmann E, <i>et al</i> (2021) (12)	Germany	Prospective longitudinal study	306	Low emotional stability	Women with less emotional stability have a bad experience of their labour, especially in case of a preterm delivery, an emergency CS, etc.
Kabukcu C, <i>et al</i> (2019) (13)	Turkey	Cross-sectional study	103	Unexpected pregnancy, multiparous women	Distress is associated with FOC.
Fenaroli V, <i>et al</i> (2019) (14)	Italy	Prospective longitudinal study	111	EA, the duration of the expulsive phase of labour	There is a need for more investigation for developing specific birth preparation.
Zhou X-L, <i>et al</i> (2021) (15)	China	Descriptive cross-sectional study	609	Low social support	Low social support is a significant risk factor for antenatal depression and tocophobia. So, it is important to develop methods for boosting social support.
Mortazavi F, <i>et al</i> (2021) (16)	Iran	Cross-sectional study	662	Age < 30, primiparity, low maternal satisfaction with pregnancy and a low level of perceived marital satisfaction	Encouraging women and supporting them may contribute to a reduction in the rate of the FOC.

CS=caesarean section

TABLE 2. Summary of all included studies related to the impact of tocophobia in the increase of caesarean sections (CSs)

Author, year of publication, reference	Country	Study design	Total sample	Main conclusion
Sluijs A-M, <i>et al</i> (2020) (17)	Netherlands	Cohort	565	Women who wanted a vaginal birth and they had it, they reported the lowest fear. Women who wanted a vaginal birth, but had a CS were at risk for severe postpartum fear.
Veringa-Skiba IK, <i>et al</i> (2021) (18)	Netherlands	Cohort	401	Tocophobia is associated with unneeded interventions like induction of labour, EA, CS.
Nieminen K, <i>et al</i> (2017) (19)	Sweden	Cohort	288	Fear of childbirth can lead to increased visits for psychosocial reasons, CS, more hours on sick leave during pregnancy and reduced normal spontaneous deliveries. Postpartum women have 38% higher costs than women with low fear because of complications.
Preis H, <i>et al</i> (2018) (20)	Israel, Norway	Secondary analysis	3408	Women in Israel prefer more medicalized practices, but they do not request CS because they care about their reproduction. Women in Norway prefer more natural practices, because they want a positive experience during labour.

TABLE 3. Main parts of studies which investigated the treatment of tocophobia

Author, year of publication, reference	Country	Study design	Number of participants	Main conclusion
Onchonga D, <i>et al</i> (2020) (21)	Kenya	Qualitative interview	33	Multiparous women faced their negative feelings through the exchange of experiences, received information about medical and other issues, and they finally changed their preference for CS to vaginal birth.
Wulcan A-C, <i>et al</i> (2019) (22)	Sweden	Qualitative study	13 midwives interviewed four groups with 2-5 participants each	A plan for delivery and provision of information about body changes during pregnancy is beneficial for women with tocophobia.
Tobiasson M, <i>et al</i> (2019) (23)	Norway	Qualitative, descriptive, explorative study	18 midwives attended four groups with 3-6 members each	The lack of knowledge about tocophobia and absence of collaboration make difficult the management of tocophobia.
Firouzan L, <i>et al</i> (2020) (24)	Iran	Clinical trial	80	Psychological support helps women to deal with their fears, to be more efficient to their labour and to prefer a vaginal delivery.
Hildingsson I, <i>et al</i> (2019) (25)	Sweden	Experimental study	70	Having a known midwife during delivery is associated with positive experience, information provision and active participation in decision-making.
Hildingsson I, <i>et al</i> (2018) (26)	Sweden	Feasibility study	Two midwives provided care to women	Antenatal and intrapartum care from a known midwife promotes vaginal delivery with no need for pain relief medicines.
Andaroon N, <i>et al</i> (2017) (27)	Iran	Clinical trial	90	The individual counselling program reduces the levels of fear.
Cankaya S, <i>et al</i> (2021) (28)	Turkey	Experimental study	93	Supportive care leads both to lower pain and duration of labour. Fear reduction is another advantage.
Hildingsson I, <i>et al</i> (2021) (29)	Sweden	Experimental cohort study	226	Women who had had a known midwife experienced a positive experience with not many interventions.
Hassanzadeh R, <i>et al</i> (2020) (30)	Iran	Cross-sectional study	204	Preparation classes reduce pregnant women's anxiety and depression and increase their knowledge about pregnancy.
Swift EM, <i>et al</i> (2021) (31)	Iceland	Quasi-experimental controlled trial	32	Childbirth education is beneficial for information and fear relief.
Kacperczyk-Bartnik J, <i>et al</i> (2019) (32)	Poland	Cross-sectional study	147	It is necessary for all primiparous women to participate in antenatal classes for fear reduction.
Toohill J, <i>et al</i> (2017) (33)	Australia	Cohort study	339	Psycho-education leads to vaginal deliveries. For every five women who received midwife counselling, one CS was averted and 145 \$ AUS were saved.

ted the impact of tocophobia on the increase in caesarean sections (17-20) (Table 2). Table 3 shows the methods of the studies that assessed the effect of midwifery care on childbirth fear (21-33) (Table 3). ▣

DISCUSSION

The purpose of this study was to examine childbirth fear and related factors in women, the impact of tocophobia on caesarean sections and the midwife's role. Our results indicate that the etiology of tocophobia is multifaceted and complex and that the fear among women varies depending on specific characteristics. For instance, an unplanned pregnancy was strongly associated

with a severe fear of childbirth (1, 4, 14). More specifically, women who did not expect a pregnancy were more stressed, because they had to change their life plan and they were two times more likely to have a severe degree of fear. Moreover, the presence of complications in the current pregnancy increased about six times the possibility of developing tocophobia. Furthermore, a poor social support (1, 15), emotional factors like anxiety and depression (6), low satisfaction with the pregnancy (16) and lack of sexual activity were also good predictors of fear of childbirth. In addition, the fear of birth was associated with the mode of delivery, because women who preferred a vaginal birth were the least afraid, while women who preferred caesa-

rean section had the highest fear (2). Age and the level of education were important risk factors too (3, 9). More specifically, being above 30 years of age and not having a formal education were common among women with fear (3). Women who had received support from their partners during previous births were less likely to develop fears and negative feelings (3, 16).

Tocophobia is also strongly associated with depression and especially with previous psychiatric treatment. The findings also support that women with tocophobia in Western countries request cesarean section because of deficient information (4). Women's personality may affect their delivery experiences. Especially women with low emotional stability with a preterm delivery or an emergency caesarean section tend to have a negative birth experience (12). In addition, unemployment, an experience of perineal tears (7), epidural anesthesia and a long expulsive stage increased the odds of reporting fear of birth. Other predictors of moderate childbirth fear in nulliparas were low family income, the description of their present pregnancy and low partner support (5).

Moreover, nulliparas had more worries about their body changes and pain (10) as well as high scores of fear and depression symptoms (3). In multiparas, predictors of severe childbirth fear were unplanned pregnancy, low level of physical activity and experience of severe dyspareunia in the first intercourse (5). Multiparas also who had a negative birth experience were more susceptible to tocophobia (10, 14) and more likely to avoid future pregnancies and prefer caesarean section. Also, previous obstetric complications were significant risk factors for both fear and depression. (3). Therefore, it is necessary to provide information and psychological counseling for multiparous and nulliparous women to reduce fear. It has been noticed that women are willing to pay 10 US \$ for these services. Factors such as high education, information and caesarean section as a preferred mode of delivery were all associated with a higher likelihood of being willing to pay for the service (10). Except for the counseling, a regular check-up, having trust in health care providers, participation in childbirth classes and in physical activity can also reduce the levels of fear (9). Another study showed that women who preferred home birth had a lower degree of fear, while those who preferred home birth but

were referred to a hospital did not report a high level of fear. These women had confidence and did not need any medical interventions.

According to the World Health Organization, the increasing number of caesarean sections for non-medical reasons is a global challenge, while the vaginal birth should be the primary mode of delivery in normal pregnancies. The fear of birth is the main reason for requesting a caesarean section, which increases the interventions and the risk of complications for the mother and newborn compared with vaginal delivery (23). More specifically, nulliparous women who preferred a caesarean section, and actually they had it, had high fear of birth. So, the preference for caesarean section is an important predictor of tocophobia. On the other hand, women who preferred a vaginal birth were more confident and had low fear. Women who wanted a vaginal delivery but had a caesarean section were at high risk to develop postpartum fear (17). In addition, the fear of birth increased the number of non-urgent obstetric interventions, especially the conduction of caesarean section, the administration of epidural anesthesia and the induction of labour (18). Furthermore, tocophobia increased the visits for psychosocial reasons and the hours on sick leave during pregnancy. Also, the perinatal costs were 38% higher than in women with low fear and the number of vaginal deliveries was lower in women with tocophobia (19).

While there is no specific treatment for women with tocophobia, several trials have been conducted in different countries to explore and compare interventions for it. Psychoeducation by trained midwives was found efficient in reducing the levels of fear and promoting the vaginal birth (24). More specifically, for every five women one caesarean section was averted and 145 AUS \$ were saved (33). In addition, antenatal classes, including pre-birth training and preparation were beneficial, while women who participated in these classes, changed their preference for caesarean section to vaginal birth and received information for medical and other issues such as body changes during pregnancy. Furthermore, preparation classes reduced the fear of birth, anxieties and depressive symptoms (21, 22, 30-32). Women who received care from a midwife had also a positive birth experience, they made decisions for their labour and did not need medicines for pain relief (25, 26, 29).

Moreover, continuous supportive care from an experienced midwife promoted vaginal delivery and reduced the levels of fear, pain and the duration of labour (26, 28). Another beneficial intervention was the individual counselling (27).

Consequently, midwives need to support women with tocophobia, preventing the non-urgent obstetric interventions. With sufficient resources to support their independence and improve their working conditions, midwives can help to demedicalize maternity care. However, according to a study which was conducted in Norway, they have to deal with several challenges. Except for the deficient resources, it was difficult for the midwives to approach fearful women because they were suspicious and uncooperative. The medical staff also was uncooperative, creating problems in fulfilling the women's wishes. Lastly, the midwives felt guilty because they could not prevent difficult events during the labor. Despite the challenges, the midwives did their best with responsibility and respect, trying to develop their strategies (23). ■

CONCLUSION

In conclusion, FOC is an extreme condition of anxiety and worries about childbirth, leading to

unpleasant experiences and negative pregnancy outcomes. The present study tried to determine the risk factors for tocophobia as well as its consequences and management. A lot of studies have pinpointed the most common risk factors, which make the etiology of tocophobia complex and multifaceted. In addition, the fear varies between individuals ranging from low to severe fear. Some women are more susceptible to fear and, as a result, they are more likely to have unnecessary interventions, mainly a caesarean section. Therefore, there is a close association between FOC and the conduction of a caesarean section. While tocophobia cannot be absolutely treated, there are several ways to reduce the level of fear. More specifically, the midwife's role is undisputable and its benefits have been confirmed. Psycho-education, preparation classes and specific counselling by trained midwives are effective methods which can be helpful in reducing fear and promoting vaginal birth. However, the data are deficient. As a result, more studies are needed to investigate tocophobia. ■

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