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Article

An Integrative Review of Fear of Childbirth

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A B S T R A C T

This study aimed to provide knowledge for midwives to deepen their understanding of their clients when working closely with women during the perinatal period through an integrative review of 'fear of childbirth', and to clarify the research topics to be addressed in the future. Methods: This study used an integrative review (IR) method in addition to bibliometric analysis methods to classify and analyse the studies. Review questions (RQ) included 1. 'what is the status of research efforts (number of papers, location, etc.) on "fear of childbirth"?', 2. 'what are the screening methods and prevalence of "fear of childbirth"?', and 3. 'what can be learned from the findings of these studies?'
Findings: RQ1: The number of papers published gradually increased after 1981 and has been increasing since 2000. Studies conducted in Scandinavia accounted for more than half of the total studies. Conversely, only five studies were conducted in Japan. RQ2: The Wijma Delivery Experience Questionnaire is a screening scale for fear of childbirth developed in Sweden, which has been translated and utilised in multiple languages. In meta-analyses worldwide, the prevalence of fear of childbirth has been reported to range from 3.7% to 43%. RQ3: Fear of childbirth leaves a negative impression of past childbirth experiences on women's psychological well-being and subsequently leads to *post-traumatic stress disorder*. Intervention studies have shown that prenatal education can help couples overcome their fear of childbirth. However, the effectiveness of intervention studies that have examined these psychological aspects has not yet been clarified.
Conclusion: The prevalence of fear of childbirth varies considerably, possibly owing to cultural differences. Research on fear of childbirth has reported negative effects on the postpartum period and on subsequent pregnancy and childbirth. Practising women-centred care may help prevent this fear.

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I. INTRODUCTION

When contractions (labour pain) begin, the women experience pain that they may have never experienced in their life earlier. Strong pain not only causes muscle tension, but also leads to severe anxiety(1). The midwife can actively ease the labour pains from the beginning of delivery, thereby relieving the fear, empowering them to face childbirth positively. Additionally, when a midwife is close to a woman for providing pain relief, a mutual relationship of trust is established. However, if a strong fear of childbirth cannot be eliminated, normal delivery may be impeded, increasing the need for medical interventions. The increase in painful medical interventions not only decreases satisfaction with childbirth, but also leads to distrust in the medical profession. In addition, there is a possibility that an increase in medical interventions may have a significant impact on postpartum parenting, daily life, and the formation of attachment with the child. In Japan, the birth-rate continues to decline, and it has been reported that this fear of childbirth is one of the causes(2). This suggests that women no longer wish to have children or experience labour pain.

Fisher et al.(3)suggested that fear of childbirth influences women's psychological well-being and negatively affects their parenting behaviours. Studies have shown that fear of childbirth during pregnancy increases the risk of emergency caesarean section(4), and that caesarean section was more frequently requested by multiparas than primiparas, which can be prevented by prudent care during childbirth(4,5). This specific anxiety-related psychological condition during the perinatal period is called fear of childbirth(3–6)[1)-4)]. Fear of childbirth has a spectrum of strong to weak feelings(3–6). Severe fear of childbirth is called "tok(c)ophobia"(7). Although the term " fear of childbirth " or "tok(c)ophobia" is used to describe the fear of childbirth in the international publications, the definition and usage of the term are not consistent. Tok(c) ophobia is caused by the traumatic experience of being forced to have a vaginal delivery by medical staff at the time of delivery(8). Although the experience of childbirth can easily lead to fear of subsequent childbirth, there are women with fears and dread of childbirth (physical injury) who have suffered from primitive childbirth fears, even if they have never delivered a baby(9). Helk et al.(10)reported that some women expressed fear and anxiety regarding pregnancy. Because their fear and anxiety were due to mistrust of the competence of healthcare providers in offering midwifery care, the midwives noted that by providing these women with careful explanations of all medical procedures, their fear and anxiety can be reduced during the later stages of pregnancy(10). In other words, the attitude of respect for the woman's decision and the healthcare provider's ability to provide care can help reduce fear and anxiety about childbirth.

However, few studies have investigated fear of childbirth in Japan, which may be a major perinatal issue(11–14). These studies have been conducted to develop a Japanese version of a fear of childbirth scale and to examine the predictors of fear of childbirth; however, they do not clarify the prevalence of fear of childbirth or tokophobia in Japan, or midwives' perceptions of it. In addition, there are no articles written in Japanese on fear of childbirth or tokophobia.

This study aimed to provide useful knowledge for Japanese midwives to deepen their understanding of their clients when working closely with women during the perinatal period through an integrative review of fear of childbirth, which is not well known in Japan, and to clarify the research topics to be addressed in the future.

II. METHOD

1. Research design

This study used an Integrative Review (IR) method that provides a comprehensive understanding of a specific phenomenon or medical problem. IR is optimally designed for the following purposes(15)

a. Nursing science
b. Simultaneous review of experimental and non-experimental studies
c. Defining concepts
d. Reviewing the theory
e. Reviewing evidence/identify gaps in the document
f. Analysing methodological issues

IR can include a variety of methodologies (experimental and non-experimental studies), but the methods for analysis, synthesis, and conclusion building are not well-formulated yet (15).

2. Review questions of this study:

a. What is the status of research efforts (number of papers, location, etc.) on "Fear of childbirth"?
b. What are the screening methods and prevalence of "fear of childbirth"?
c. What can be learnt from the findings of the studies?

3. Search Databases

We searched MEDLINE, CINAHL, Cochrane Library, ClinicalTrial.gov, PROSPERO, and Medical Central Journal without limiting the year of publication. The key words used in the search were: “tok(c)ophobia” or “fear of childbirth”. Bibliometric analysis methods were also used to classify and analyse the studies.

The selection criteria included case studies, quantitative studies, and qualitative studies on fear of childbirth or tokophobia that had already been published. Grey papers and conference proceedings were excluded.

4. Analysis methods

Descriptive statistics for the quantitative data were calculated using Microsoft Excel for Windows.

5. Ethical considerations

The Ethics Review Committee of the Kagawa Prefectural University of Health Sciences approved the research, which did not involve human subjects (No. 359).

III. RESULTS

Tok(c)ophobia is included in phobic anxiety disorders, unspecified in the International Classification of Diseases, 11th edition (World Health Organization, 2019). According to the American Statistical Manual of Mental Disorders, 5th edition (DSM-5)(16), an important aspect of phobias is that they may not be explained by other mental health symptoms. Hence, the fear that occurs specifically during the perinatal period is interpreted as "fear of childbirth" or

"tok(c)ophobia, as described in Western literature. However, the definition and usage of these terms are not consistent.
The research findings to date in response to the three review questions (RQs) are summarised below.

RQ. What is the status of research efforts (number of papers, location, etc.) on "Fear of childbirth"?

1. Annual Changes in the Number of Papers

The selected references were included in the analysis based on the inclusion and exclusion criteria of the search results. A total of 843 papers were retrieved, of which 443 were analysed using Bibliometric analysis after eliminating duplicates. The results showed that the first paper on fear of childbirth was published in Italy in 1955; the number of papers published gradually increased after 1981 and has been on the rise since 2000(Fig.1).

2. Areas where studies of fear of childbirth have advanced

Sweden was the most studied region (73 papers), followed by Norway, Turkey, and the UK. Studies conducted in Scandinavia accounted for more than half of the total studies (Fig.2).

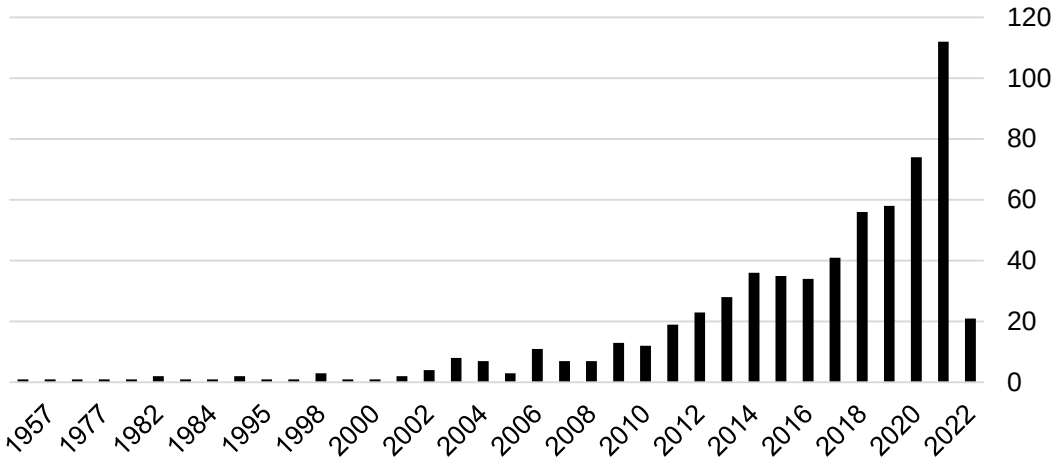

Fig 1. Annual Changes in the Number of Papers

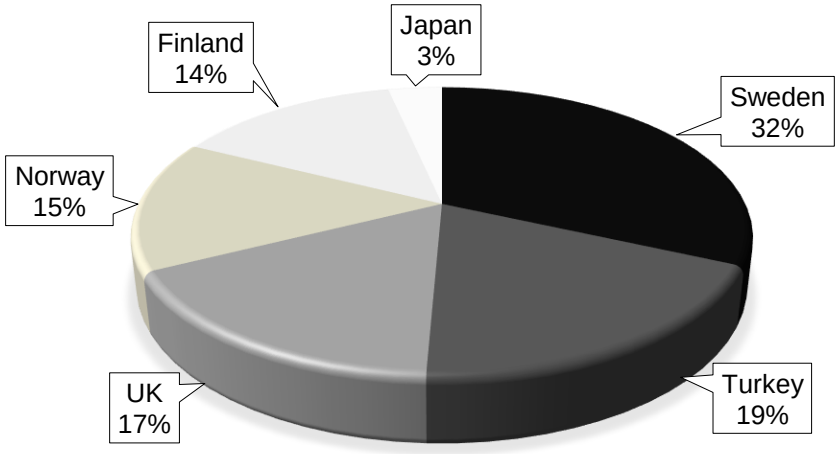

FIG.2. COUNTRIES ENGAGED IN RESEARCH ON FEAR OF CHILDBIRTH

RQ. What is the screening method and prevalence of "fear of childbirth"?

Research on fear of childbirth has been conducted mainly in Europe; few studies have been conducted in Asian countries or Japan. The Wijma Delivery Experience Questionnaire (W-DEQ) was developed in Sweden (Scandinavia), and can be used during pregnancy and delivery, to suggest appropriate intervention required for the fear of childbirth(17). The W-DEQ consists of four dimensions (fear, isolation, lack of positive expectations, and risk) and has two versions, one for pregnancy and the other for delivery, each with 33 items. The cut-off points vary from very Intense fear of childbirth (≥100), intense fear of childbirth (≥95), clinical importance (≥85), and high level of fear (≥71; ≥ 66)(18–28). The W-DEQ has been translated into several languages(29–31), and a Japanese version—the JW-DEQ(14)—has also been developed. However, the Japanese version has been published in English, and is not easily accessible. The prevalence of fear of childbirth is reported to be 25% in Sweden(32) , but a worldwide meta-analysis of prevalence rates found a significant range from 3.6% to 43%(33). The lowest prevalence reported using the W-DEQ was 3.7%(32,33). Some studies did not use the W-DEQ for screening, the prevalence of which ranged from 3.6%(34) to 31.1%(33). In Japan, Takegata et al.(14)conducted a survey to verify the reliability and validity of the JW-DEQ, while another study(13)examined the association between the experience of childbirth and postpartum depression; however, the prevalence of fear of childbirth has not been clarified. Several studies have been reported in English, whether the concept of fear of childbirth is recognised by professionals also remains unclear (Table.1).

Table1. Research in Japan of fear of childbirth

Article	Research design
1. Takegata, M., Haruna, M., Morikawa, M., Yonezawa, K., Komada, M., & Severinsson, E. (2018). Qualitative exploration of fear of childbirth and preferences for mode of birth among Japanese primiparas. *Nursing & health sciences*, *20*(3), 338-345.	Qualitative research
2. Narita, Y., Shinohara, H., & Kodama, H. (2018). Resting heart rate variability and the effects of biofeedback intervention in women with low-risk pregnancy and prenatal childbirth fear. *Applied Psychophysiology and Biofeedback*, *43*(2), 113-121.	Quasi-Experimental Research
3. Nishi, D., & Usuda, K. (2017). Psychological growth after childbirth: an exploratory prospective study. *Journal of Psychosomatic Obstetrics & Gynecology*, *38*(2), 87-93.	Cross sectional research
4. Takegata, M., Haruna, M., Matsuzaki, M., Shiraishi, M., Okano, T., & Severinsson, E. (2017). Aetiological relationships between factors associated with postnatal traumatic symptoms among Japanese primiparas and multiparas: A longitudinal study. *Midwifery*, *44*, 14-23.	Cross sectional research
5. Takegata, M., Haruna, M., Matsuzaki, M., Shiraishi, M., Okano, T., & Severinsson, E. (2014). Antenatal fear of childbirth and sense of coherence among healthy pregnant women in Japan: a cross-sectional study. *Archives of women's mental health*, *17*(5), 403-409.	Cross sectional research

RQ. What can be learnt from the findings of the studies?

The pre-natal risk factors most strongly associated with postpartum post-traumatic stress disorder (PTSD)(8) included fear of childbirth (r = 0.41), and the risk factors at delivery included negative subjective birth experience (r = 0.59) and operative childbirth (assisted vaginal or caesarean section, r = 0.48) (35).

In Japan, five papers were related to fear of childbirth in Japan, but there were no randomised controlled trials (Table1).

Narita et al.(36)reported a study in which they utilised a device that could measure autonomic nervous system activity during pregnancy in women with a fear of childbirth due to labour pains. They found that by visually presenting the participants with information on their individual heart rate when they imagined and feared childbirth, and by having them practice self-regulation of their fears to understand their own state from a physiological and psychological perspective, significantly reduced their heart rate variability during the imagery of childbirth compared to the group that did not practice the technique. Takegata et al.(37)found that fear of childbirth was a significant predictor of postpartum traumatic stress symptoms in both first-time mothers and postpartum women. Nishi et al.(38)reported that low levels of fear of childbirth may be linked to postpartum psychological growth. The less the pain experienced during childbirth, the better maintained a woman's subsequent physical and mental health is.

Intervention studies have examined the effects of self-efficacy sessions to promote a positive childbirth experience(39) and autonomous training methods to reduce the fear of childbirth(36). Additionally, yoga has been reported to help increase self-efficacy in managing fear of childbirth(39). Some studies have found psychological counselling to be effective in reducing fear of childbirth and anxiety during pregnancy(40). Intervention studies have shown that pre-natal education can help couples overcome their fear of childbirth(41). Though all these studies have attempted to work on the psychological aspects to reduce the fear of childbirth, no clear conclusions have been reached regarding the efficacy of these interventions(42).

IV. DISCUSSION

Areas actively engaged in fear of childbirth research

fear of childbirth is a reason to request a cesarean section and an issue that impacts the woman’s health. The number of studies has gradually increased since the 1980s. Fear of childbirth was rediscovered when a medical doctor reported that an extreme fear of childbirth existed among women who requested an emergency caesarean section at the time of delivery(3). However, this study revealed that fear of childbirth studies has been conducted mainly in Europe, Australia, Canada, and the US, with only a few published in Japan.

Wjima reported a sharp increase in research on fear of childbirth in Europe, focusing on fear of childbirth as a remarkable condition that needs intervention because it leads to PTSD. Pregnant women with a fear of childbirth are driven to a situation where they have no choice but to seek an abortion or caesarean section(43). The onset of PTSD is more common in cases of normal delivery. Thus, PTSD may also result from an excessive fear of labour pain when a woman is forced to have a vaginal delivery by a care provider despite her desire to undergo caesarean section(9). This type of fear of childbirth, when triggered by labor pains during delivery, is called

secondary tok(c)ophobia(9). In some cases, however, fear of childbirth is present even before delivery, which is known as primary tocophobia, but can lead to avoidance of pregnancy(9).

However, few fear of childbirth studies have been conducted in Japan. This may be related to the unique nature of the perception of labour pain in Japan. For example, in Japan, breathing techniques, acupressure, and massage are primarily used to control labour pain, and the use of laughter gas(44)and anaesthesia is not common. In addition, an interview with women who experienced first-time births in Japan reported that they did not wish to undergo a caesarean section because of their fear of childbirth (difficulty in controlling pain during delivery, long labour, lack of family support, loneliness, etc)(45). Thus, fear of childbirth may not be common in Japan, where pain during delivery is taken for granted.

Furthermore, in Japan, cultural perceptions are generally less tolerant of the idea that childbirth is scary because of the painful process, possibly because of the view that overcoming pain during childbirth is part of becoming a mother (46) and that labour pain is a natural part of childbirth. Even midwives, the professionals who accompany women during labour, may not understand the fear of childbirth, with the majority believing that going through labour is a natural part of the process of becoming a mother(46). However, midwives in Japan should have an understanding of fear of childbirth, as a severe fear of childbirth not only increases medical intervention but also decreases satisfaction with childbirth and leads to distrust in healthcare providers.

Fear of childbirth scale and its prevalence

Screening for fear of childbirth was developed mainly in Europe, and the W-DEQ is the most translated and used tool in multiple languages (29–31). The prevalence rates vary widely, and 3.7%(32) to 43%(33) of women may develop a fear of childbirth. Some studies did not use the W-DEQ for screening, the prevalence of which ranged from 3.6%(47) to 31.1%(48). The prevalence of fear of childbirth varied widely depending on the location of the study. Nilsson et al.(49) reported a ‘very severe’ to ‘severe’ fear of childbirth rate of approximately 10% and a moderate fear of childbirth rate of approximately 25%. However, the prevalence of fear of childbirth varied widely among the reported countries, and the exact reasons for this are unclear(49). The W-DEQ(17) consists of four dimensions and 33 items, while the other scales use a visual analogue scale to elicit responses on whether respondents are fear childbirth. There may be gaps in the prevalence rates because the aspects of fear of childbirth being questioned differ across scales. However, it is important to assess whether fear of childbirth is at a level that requires clinical intervention, and measures that can evaluate this should be considered. In Japan, although there have been reports of women requesting caesarean sections owing to an extreme fear of labour in the first stage of delivery, the concept of fear of childbirth has not been recognised by many professionals, and its prevalence is not known. In Japan, it is necessary to investigate the extent to which fear of childbirth exist at a level that requires clinical intervention. However, midwives and obstetricians in Japan must recognise the existence of fear of childbirth first.

The Future of fear of childbirth Research

Fear of childbirth was most strongly associated with postpartum PTSD(35). A few intervention studies examined the effects of self-efficacy sessions(39)to promote positive birth

experiences and autonomous training methods(36) to reduce fear of childbirth. Although the number of intervention studies is small, these interventions have been found to be effective(50). The presence of fear of childbirth should be confirmed before delivery, and intervention by a midwife or obstetrician, including psychological counselling, is necessary for cases in which the clinical level of fear of childbirth indicates that an intervention is required(51). The presence of fear of childbirth can be assessed in a one-on-one interview without using a scale(51). Fears experienced during childbirth include abandonment, medical intervention, and verbal abuse by medical staff. These experiences can lead to postpartum PTSD(52,53). One report suggested that women-centred care practices could prevent adverse pregnancy outcomes(54). Respectful and beneficial interactions between women and healthcare providers create positive perceptions(55). Practising women-centred care can help prevent fear of childbirth(56). It is necessary to study how to train midwives to practice woman-centred care.

V. CONCLUSION

The concept of birth phobia is primarily a Western concept, less recognized in the Eastern world, particularly in Japan. Since research efforts on "fear of childbirth" are mainly conducted in Europe, its prevalence and impact is yet to be fully established in Asia, especially in Japan. Though the self-administered Wijma Delivery Experience Questionnaire is widely used and has been translated into many languages to screen for fear of childbirth worldwide, ohter scales are also being developed. A possible reason for the lack of studies on fear of childbirth in Japan may be the unique concept of labour pain. Studies on fear of childbirth have reported negative effects of fear of childbirth during the postpartum period and subsequent pregnancies and deliveries. Therefore, it is important to evaluate fear of childbirth and develop methods to prevent it.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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