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Research Article

Mothers' Decisional Conflict and Information Needs Regarding Breastfeeding Continuation or Termination: a Cross-Sectional Questionnaire Survey

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Abstract

Background: Many factors affect mothers' decisions to continue or terminate breastfeeding, and they frequently experience difficulty making this decision. However, there is little research on mothers' information needs and decisional conflict experiences regarding breastfeeding continuation/termination. **Objective:** To examine breastfeeding decisional conflict and information needs in mothers in Japan. **Methods:** This was a cross-sectional survey of 158 mothers (aged ≥20 years) attending health check-ups in Japan. Decisional conflict was assessed using the Decisional Conflict Scale-Japanese version. Participants responded to self-devised items on decisional conflict reasons and information needs. **Results:** Of participants, 107 (67.7%) experienced decisional conflict about breastfeeding continuation/termination. Conflict was strongest after 6 months postpartum. The most common reasons for conflict were lack of sleep for both mother and child (both n = 33; 30.8%), lack of knowledge of how to terminate breastfeeding (n = 27; 25.2%), plans to return to work (n = 25; 23.4%), and plans for children to attend nursery school (n = 23; 21.5%). Participants relied most on the Internet (n = 112; 70.9%), friends (n = 76; 48.1%), and midwives (n = 67; 42.4%) to help them make decisions. More than half of mothers reported needing information about breast care and how to terminate breastfeeding. Few mothers had received professional education and support about breastfeeding. **Conclusion:** Many mothers experience decisional conflict about breastfeeding continuation/termination but receive little professional support, particularly after 6 months postpartum. Strategies are needed to provide informed support to help mothers make better decisions about whether and when to terminate breastfeeding.

Keywords: Breastfeeding; Continuation of breastfeeding; Decisional conflict; Information needs; Mothers; Support; Termination of breastfeeding

Introduction

Breastfeeding has various advantages, including prevention of childhood infection, better neurodevelopmental outcomes, better maternal physical and mental health, and economic benefits. Therefore, in Japan, more than 90% of pregnant women wished to breastfeed, and approximately 60% of mothers received information on how to breastfeed from childbirth facilities [1]. In addition, more than 70% of mothers received support for establishing breastfeeding during hospitalization for childbirth, and more childbirth facilities than ever before provide measures for successful breastfeeding, such as mother-infant sharing a room, early breastfeeding, and baby-led feeding [1]. Thanks in part to these efforts, a high percentage of mothers in Japan are breastfeeding at one month of age, 96.5% (51.3%: breastfeeding, 45.2%: mixed feeding), and at six months of age, 81.1% (53.8%: breastfeeding, 27.3%: mixed feeding) [1].

The American Academy of Pediatrics and the World Health Organization (WHO) recommend continued breastfeeding beyond ages two years [2,3]. However, mothers usually decide whether to continue or terminate breastfeeding according to various reasons, including their physical condition and return to work [4-6]. In Japan, the timing of breastfeeding termination has also been reported in literature reviews as an average of 9.9-16.5 months, although there is variation across studies [6]. In reality, there are few opportunities to receive support for continuation and termination of breastfeeding, although Japan's latest guide for support of breastfeeding and weaning states that "support should be provided with respect for the mothers' ideas regarding when it is appropriate to continue breastfeeding" [7]. Some have reported on the implementation of classes on continuing breastfeeding after returning to work and classes on weaning or breastfeeding termination [8-9], but it has also been reported that few receive explanations about breastfeeding of termination, and some have expressed a desire for information and consultation on termination of breastfeeding [6].

In recent years, there is increasing recognition of the importance of support for decisional conflict [10]. Decision-making involves a choice between two or more clear options; decisional conflict is a state of uncertainty about a course of action. Such uncertainty is more likely when anticipated regret over the positive aspects of rejected options is likely, when there is a need to make value trade-offs in selecting a course of action, when a person is confronted with decisions involving risk or outcome uncertainty, and when the choices involve high stakes with substantial potential gains and losses [11]. Importantly, decisional conflict can be reduced by well-informed decision support [10].

Although few studies have focused on mothers' decisions regarding breastfeeding continuation/termination, it has been reported that they experience uncertainty when deciding whether to stop breastfeeding [12,13]. Additionally, mothers' decisions to continue or terminate breastfeeding in the absence of well-informed decision support may lead to feelings of guilt and regret [14]. These findings suggest that mothers may experience decisional conflict regarding the continuation or termination of breastfeeding, and that well-informed professional decision support is necessary to alleviate such conflict. However, mothers' decisional conflict about breastfeeding continuation/termination and their information needs regarding this decision have not been investigated. The study aim was to investigate decisional conflict and information needs regarding breastfeeding continuation/termination among mothers with experience of breastfeeding their infants.

Materials and Methods

Study Participants

This cross-sectional study was conducted from January 2021 to April 2021. The survey included 689 mothers with experience of breastfeeding their infants who attended 1-year and 6-month health check-ups in three municipalities in the Kansai region of Japan. The check-ups are conducted by municipalities for infants aged 1 year and 6 months to less than 2 years and are regulated by the Maternal and Child Health Act in Japan.

In this study, some infants received the check-up after the age of 2 years due to the delay in holding the check-up by covid-19.

All participants were aged ≥20 years and completed self-administered questionnaires. The exclusion criterion was mothers with multiple births (e.g., twins, triplets). Of eligible mothers, 184 (26.7%) agreed to participate in the survey. After excluding those with missing data, 158 mothers were included in the analyses.

The study protocol was approved by the institutional review boards of Kyoto college of Nursing (approval no. 202003) and complies with the ethical standards of the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all study participants.

Data Collection and Questionnaires

Information obtained using the self-administered questionnaire comprised mother's age, child's age, parity, employment status, time to breastfeeding termination, education and support with breastfeeding from professionals, decisional conflict regarding continuation/termination of breastfeeding, and information sources and information needs about breastfeeding continuation/termination.

Participants were asked about the presence or absence of decisional conflict regarding continuation or termination of breastfeeding. Participants who reported decisional conflict completed the Japanese version of the Decisional Conflict Scale (DCS), which has been reported as reliable and valid [15-19]. Responses on the 16-item DCS are on a five-point Likert scale: 0 (strongly agree), 1 (agree), 2 (neither agree nor disagree), 3 (disagree), and 4 (strongly disagree). DCS score is calculated by summing the scores (0 to 4) for each of the 16 items, dividing the total score by 16, and then multiplying by 25. Score range from 0 to 100, scores >37.5 are associated with decision delay or uncertainty about implementation [11].

Items to assess the reasons for decisional conflict were created based on the literature [6,7,20,21]. For each item, possible responses were "yes" or "no." Items to assess information needs about breastfeeding continuation/termination were created based on the literature [7,20,21]. For each item, possible responses were on a five-point Likert scale: 0 (not necessary), 1 (not really necessary), 2 (neither), 3 (somewhat necessary), 4 (necessary).

Statistical Analyses

Presence/absence of decisional conflict regarding continuation or termination of breastfeeding, reasons for decisional conflict, information sources about breastfeeding continuation/termination, and information needs about breastfeeding continuation/termination were described. Additionally, decisional conflict was classified into three levels: no decisional conflict group, low decisional conflict group (DCS score: ≤37.5), and high decisional conflict group (DCS score: >37.5) [11]. Differences in variables between the decisional conflict groups were assessed using chi-square tests or Fisher's exact test. All data were analyzed using SPSS statistical software version 26 (IBM SPSS Japan, Tokyo, Japan). All reported P-values were two-tailed, and values <0.05 were considered statistically significant.

Results

Table 1 shows mothers' characteristics and breastfeeding status. Of mothers, 54 (34.2%) terminated breastfeeding 6-12 months after childbirth, 76 (48.1%) after 12 months following childbirth, and more than 80% >6 months after childbirth. A total of 19 mothers (12.0%) received education and support regarding breastfeeding from professionals 6–12 months after childbirth, and 7 (4.4%) after 12 months postpartum.

n	158
Age of mothers (years)	33.9 ± 4.7
Age of children (months)	21.5 ± 3.8
Parity	
Primipara	80 (50.6)
Multipara	78 (49.4)
Employment	
Unemployed	54 (34.2)
Employed (return by 6 months)	14 (8.9)
Employed (return by 6-12 months)	36 (22.8)
Employed (return after 12 months)	54 (34.2)
Time to breastfeeding terminated	
Before 6 months	28 (17.7)
6–12 months	54 (34.2)
After 12 months (including breastfeeding ongoing)	76 (48.1)
Education and support for breastfeeding from professionals*	

During pregnancy	86 (54.4)
During childbirth hospitalization	136 (86.1)
From discharge to 1 month	73 (46.2)
1–6 months	29 (18.4)
6–12 months	19 (12.0)
After 12 months	7 (4.4)
Continuous data are shown as mean ± standard deviation. Categorical data are shown as n (%). *Multiple choice.	

Table 1: Characteristics and breastfeeding status among mothers.

Table 2 shows decisional conflict regarding breastfeeding continuation/termination among mothers. In this study, 51 (32.3%) participants were classified in the no decisional conflict group, 49 (31.0%) in the low decisional conflict group (DCS score: ≤37.5), and 58 (36.7%) in the high decisional conflict group (DCS score: >37.5). Of the 107 mothers in the low and high decisional conflict groups, 38 (35.5%) felt the strongest conflict regarding breastfeeding continuation/termination at 6-12 months postpartum and 40 (37.4%) at 12 months postpartum.

n	158
Decisional conflict regarding continuation or termination of breastfeeding*	
No decisional conflict group	51 (32.3)
Low decisional conflict group (DCS: ≤37.5)†	49 (31.0)
mean DCS score in the low decisional conflict group	26.3 ± 7.9
High decisional conflict group (DCS: >37.5)†	58 (36.7)
mean DCS score in the high decisional conflict group	53.5 ± 11.6
Time when decisional conflict regarding breastfeeding continuation/termination was strongest‡	
Before 1 month	12 (11.2)
1-6 months	17 (15.9)
6-12 months	38 (35.5)
After 12 months	40 (37.4)
Continuous data are shown as mean ± standard deviation. Categorical data are shown as n (%). ‡Among 107 mothers with decisional conflict. DCS = Decisional Conflict Scale.	

Table 2: Decisional conflict regarding continuation or termination of breastfeeding among mothers.

Table 3 shows the frequency and differences in reasons for decisional conflict regarding breastfeeding continuation/termination between the low and high decisional conflict groups. Of the 107 mothers in the low and high decisional conflict groups, the five most frequently reported reasons for decisional conflict were "My child did not sleep much" (30.8%), "I did not get enough sleep or rest" (30.8%), "I did not know how to terminate breastfeeding" (25.2%), "I was planning to return to work" (23.4%), and "My child is going to attend nursery school or a childcare center" (21.5%). Mothers in the high decisional conflict group cited the reasons "My child did not sleep much" (P = 0.032) and "I did not get enough sleep or rest" (P = 0.032) significantly more than mothers in the low decisional conflict group.

	Total	Decisional conflict		*P*-value
		Low decisional conflict group*	High decisional conflict group*	
n	107	49	58	
Reasons for decisional conflict in deciding to continue/terminate breastfeeding†				
1) My child did not sleep much	33 (30.8)	10 (20.4)	23 (39.7)	0.032
2) I did not get enough sleep or rest	33 (30.8)	10 (20.4)	23 (39.7)	0.032
3) I did not know how to terminate breastfeeding	27 (25.2)	11 (22.4)	16 (27.6)	0.542
4) I was planning to go back to work	25 (23.4)	13 (26.5)	12 (20.7)	0.477
5) My child is going to attend nursery school or a childcare center	23 (21.5)	12 (24.5)	11 (19.0)	0.488
6) My child did not drink much breast milk anymore	22 (20.6)	8 (16.3)	14 (24.1)	0.319
7) My milk supply was low or stopped	22 (20.6)	8 (16.3)	14 (24.1)	0.319
8) I had problems with my nipples or breasts	21 (19.6)	7 (14.3)	14 (24.1)	0.201
9) I did not know how long I should continue breastfeeding	21 (19.6)	8 (16.3)	13 (22.4)	0.430
10) My child was eating a lot of complementary foods	18 (16.8)	12 (24.5)	6 (10.3)	0.051
11) My child wanted a lot of breast milk	17 (15.9)	6 (12.2)	11 (19.0)	0.343
12) I had regrets and a sense of incompleteness after finishing breastfeeding my older child (multipara only: n = 51)	8 (15.7) (n=51)	4 (16.0) (n=25)	4 (15.4) (n=51)	>0.999
13) My child did not eat much complementary food	15 (14.0)	6 (12.2)	9 (15.5)	0.627
14) I had health concerns or treatment limitations	8 (7.5)	6 (12.2)	2 (3.4)	0.139
15) I needed a drink	8 (7.5)	4 (8.2)	4 (6.9)	>0.999
16) The weight gain of my child was not good	7 (6.5)	2 (4.1)	5 (8.6)	0.450
17) I was hoping to get pregnant again	7 (6.5)	2 (4.1)	5 (8.6)	0.450
18) My child had health concerns or treatment limitations	3 (2.8)	1 (2.0)	2 (3.4)	>0.999

Categorical data were analyzed using chi-square test or Fisher's exact test and are shown as n (%). *Decisional conflict: Low decisional conflict group (DCS score: ≤37.5), High decisional conflict group (DCS score: >37.5).
†Multiple choice. DCS = Decisional Conflict Scale.

Table 3: Frequency and differences in reasons for decisional conflict between the low and high decisional conflict groups.

Table 4 shows the frequency and differences in information sources about breastfeeding continuation/termination between the decisional conflict groups. The three most frequently used media types were Internet (e.g., website) (70.9%), social networking services (e.g., Facebook, Instagram) (30.4%), and smartphone applications (18.4%). The most common source of information from other people was friends (48.1%), followed by midwives (42.4%), family and other relatives (35.4%), and public health nurses (19.6%). Information sources about breastfeeding continuation/termination did not differ significantly between the decisional conflict groups.

	Total	Decisional conflict			*P*-value
		No decisional conflict group	Low decisional conflict group*	High decisional conflict group*	
n	158	51	49	58	
Information sources about breastfeeding continuation/ termination†					
Media					
Internet (e.g., websites)	112 (70.9)	31 (60.8)	36 (73.5)	45 (77.6)	0.139
SNS (e.g., Facebook, Instagram)	48 (30.4)	17 (33.3)	12 (24.5)	19 (32.8)	0.557
Smartphone applications	29 (18.4)	10 (19.6)	11 (22.4)	8 (13.8)	0.495
Magazines	13 (8.2)	4 (7.8)	3 (6.1)	6 (10.3)	0.725
TV	7 (4.4)	3 (5.9)	2 (4.1)	2 (3.4)	0.819
Municipal newsletters	4 (2.5)	0 (0.0)	2 (4.1)	2 (3.4)	0.368
Newspapers	1 (0.6)	0 (0.0)	0 (0.0)	1 (1.7)	0.420
People					
Friend	76 (48.1)	28 (54.9)	21 (42.9)	27 (46.6)	0.463
Midwife	67 (42.4)	20 (39.2)	21 (42.9)	26 (44.8)	0.837
Family and relatives	56 (35.4)	18 (35.3)	22 (44.9)	16 (27.6)	0.176
Public health nurse	31 (19.6)	7 (13.7)	10 (20.4)	14 (24.1)	0.388
Nurse	23 (14.6)	6 (11.8)	9 (18.4)	8 (13.8)	0.632
Doctor	12 (7.6)	4 (7.8)	3 (6.1)	5 (8.6)	0.886
Colleague	11 (7.0)	6 (11.8)	3 (6.1)	2 (3.4)	0.453
Nursery school teacher	7 (4.4)	1 (2.0)	2 (4.1)	4 (6.9)	0.453

Categorical data were analyzed using chi-square test and are shown as n (%). *Decisional conflict: Low decisional conflict group (DCS score: ≤37.5), High decisional conflict group (DCS score: >37.5). †Multiple choice. DCS: Decisional Conflict Scale, SNS: Social Networking Service.

Table 4: Frequency and differences in information sources about breastfeeding continuation/termination between the decisional conflict groups.

Table 5 shows the frequency and differences in information needs about breastfeeding continuation/termination between the decisional conflict groups. More than 50% of mothers responded that they needed information about breastfeeding continuation/termination in all information categories. The five most common information needs about breastfeeding continuation/termination were "How to prevent nipple and breast problems during breastfeeding" (89.9%), "How to terminate breastfeeding" (83.5%), "How to reduce the frequency of breastfeeding" (81.6%), "How to care for my breasts after breastfeeding termination" (81.6%), and "How to care for my child after breastfeeding termination" (81.0%). The following information needs differed significantly between the decisional conflict groups: "How to terminate breastfeeding" (P = 0.009), "How to care for my breasts after breastfeeding termination" (P = 0.045), "Breastfeeding and its relationship with next pregnancy or fertility treatment" (P = 0.044), "Recommended duration of breastfeeding" (P = 0.014), and "Average termination of breastfeeding" (P = 0.009).

	Total	**Decisional conflict**			***P*-value**
		No decisional conflict group	**Low decisional conflict group***	**High decisional conflict group***	
n	158	51	49	58	
Information needs about breastfeeding continuation/termination†					
1) How to prevent nipple and breast problems during breastfeeding	142 (89.9)	42 (82.4)	46 (93.9)	54 (93.1)	0.095
2) How to terminate breastfeeding	132 (83.5)	36 (70.6)	45 (91.8)	51 (87.9)	0.009
3) How to reduce the frequency of breastfeeding	129 (81.6)	39 (76.5)	39 (79.6)	51 (87.9)	0.275
4) How to care for my breasts after breastfeeding termination	129 (81.6)	36 (70.6)	43 (87.8)	50 (86.2)	0.045
5) How to care for my child after breastfeeding termination	128 (81.0)	38 (74.5)	42 (85.7)	46 (79.3)	0.377
6) Relationship between breastfeeding and child growth and development	126 (79.7)	38 (74.5)	42 (85.7)	46 (79.3)	0.377
7) How and when to breastfeed and pump after returning to work	125 (79.1)	37 (72.5)	41 (83.7)	43 (74.1)	0.362
8) Relationship between breastfeeding and tooth decay in children	121 (76.6)	37 (72.5)	41 (83.7)	43 (74.1)	0.362
9) Breastfeeding and its relationship to next pregnancy or fertility treatment	111 (70.3)	30 (58.8)	40 (81.6)	41 (70.7)	0.044
10) How to store the milk I have milked	110 (69.6)	32 (62.7)	34 (69.4)	44 (75.9)	0.331
11) How to express breast milk	109 (69.0)	34 (66.7)	31 (63.3)	44 (75.9)	0.340
12) Recommended duration of breastfeeding	94 (59.5)	22 (43.1)	32 (65.3)	40 (69.0)	0.014

13) Average termination of breastfeeding	85 (53.8)	19 (37.3)	33 (67.3)	33 (56.9)	0.009
Categorical data were analyzed using chi-square test and are shown as n (%). *Decisional conflict: Low decisional conflict group (DCS score: ≤37.5), High decisional conflict group (DCS score: >37.5). †Multiple choice. DCS: Decisional Conflict Scale.					

Table 5: Frequency and differences in information needs about breastfeeding continuation/termination between the decisional conflict groups.

Discussion

In this study, 67.7% of mothers experienced decisional conflict regarding the continuation or termination of breastfeeding, and 36.7% of mothers experienced strong conflict (decisional conflict score ≥37.5). Compared with a previous study on women's decisional conflicts about painless childbirth [22], DCS scores in this study were high, indicating that decisional conflict about breastfeeding continuation/termination is an important issue among breastfeeding mothers. In terms of timing, most mothers (72.9%) experienced the strongest decisional conflict regarding breastfeeding after 6 months postpartum. However, very few mothers reported receiving education or support from professionals during this period. Therefore, we believe it is important to support mothers during this period because they experience high decisional conflict regarding breastfeeding continuation/termination but receive little support.

Regarding the reasons for decisional conflict about breastfeeding continuation/termination, sleep-related problems were the first and second reasons for decisional conflict. Furthermore, mothers in the high decisional conflict group cited sleep-related reasons significantly more than mothers in the low decisional conflict group. Previous studies have reported that 1.5-year-old toddler's night-time breastfeeding decreases their night-time sleep duration, and showed that mothers felt less burdened after breastfeeding termination because they were able to sleep at night [23,24]. Therefore, we believe that professionals need to empathize with mothers and provide support to help alleviate sleep problems associated with breastfeeding. In the present study, the third most cited reason for decisional conflict was "I did not know how to terminate breastfeeding." There was also a high need for information on how to terminate breastfeeding, especially among mothers experiencing decisional conflict. Some mothers feel unsure of how to terminate breastfeeding [1]. Therefore, professionals need to support not only mothers who initiate breastfeeding, but also those considering continuation or termination of breastfeeding. The next most common reason for decisional conflict was related to returning to work and enrolling children in nursery school. In recent years, the number of women in the workforce in developed countries has increased; therefore, many mothers have terminated breastfeeding to return to work [4,25]. Thus, we believe that it is important for professionals to provide decision support tailored to the situation of mothers who are considering breastfeeding continuation/termination to return to work.

Regarding information needs about breastfeeding continuation/termination, in this survey, a high proportion of respondents reported requiring information about all aspects of breastfeeding continuation/termination, especially information about breast care. The incidence of mastitis among lactating women is as high as 33% [26], and one in four lactating women terminates breastfeeding owing to mastitis [27]. It has also been reported that mastitis, induration, and breast pain develop after the last breastfeeding [28], and breast problems are serious for lactating women. Therefore, we believe it is important to provide information on appropriate breast care methods to support women in making informed decisions. Furthermore, our participants (especially those with decisional conflict) reported a high need for information on breastfeeding and its relationship with next pregnancy or fertility treatment. Breastfeeding suppresses ovulation by reducing estrogen secretion. In recent years, the infertility treatment rate has increased annually [29], and some mothers are obviously concerned that continued breastfeeding may affect their next pregnancy. Therefore, we believe that it is important for professionals to provide appropriate information as needed on the relationship between breastfeeding and fertility, given that mothers consider their next pregnancy when making decisions about continuing or terminating breastfeeding.

The Internet (70.9%) was the most common source of information about breastfeeding continuation/termination, with friends (48.1%), family (35.4%), and social networking sites (30.4%) also being common. The use of professionals such as midwives (42.4%) and public health nurses (19.6%) was less common. In addition, Information sources about breastfeeding continuation/termination did not differ significantly between the decisional conflict groups. Since the Internet is convenient and most mothers use it, it may be useful to provide information on continuation/termination of breastfeeding on the Internet. However, there are concerns that most mothers do not consult with experts about child-rearing information obtained from the Internet and problems with unreliable information [30], as well as confusion about the large amount of information that they had to deal with [6]. Therefore, it is important to follow up with mothers

by providing correct information based on evidence, even on the Internet. In addition, support from relatives and peers is said to be as effective as professionals in breastfeeding, and it is important to consider supporters according to region and method of provision [31]. However, they often need correct information and detailed professional support, such as breast care or fertility treatment. Accordingly, it is important that professionals provide reliable information tailored to the mother's situation and needs to mothers who are conflicted about the decision to continue/termination of breastfeeding.

A strength of this study is that it is the first to identify the frequency of decisional conflict and information needs regarding breastfeeding continuation/termination among mothers, and it provides specific directions for support. However, there were several study limitations.

First, we cannot rule out the possibility of selection bias because we used convenience sampling and the response rate was 26.7%. Second, we cannot rule out the possibility of memory bias because some mothers responded based on their past experiences with decisional conflicts regarding breastfeeding continuation/termination. Third, it is not possible to determine causality because this was a cross-sectional study. Despite these potential limitations, the present findings suggest that many mothers experienced decisional conflict regarding breastfeeding continuation/termination. The findings indicate the importance of well-informed professional support to enable mothers to make better decisions regarding the continuation or termination of breastfeeding.

Conclusion

This study investigated decisional conflict and information needs regarding the continuation or termination of breastfeeding. Many mothers experienced decisional conflict regarding this issue, and the conflict was particularly strong after 6 months postpartum. The reasons for decisional conflict regarding breastfeeding continuation/termination included sleep issues for the mother and the child, lack of information about termination of breastfeeding, and returning to work or enrolling a child in nursery school. Mothers reported the need for information on how to provide breast care, how to terminate breastfeeding, and the relationship between breastfeeding and fertility. Currently, little professional support is provided after 6 months postpartum, when decisional conflicts increase. We believe that it is important to provide well-informed decision support that reduces decisional conflict regarding breastfeeding continuation or termination.

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Consent for Publication

All patients participated on a voluntary basis and gave their informed consent.

Ethics Approval and Consent to Participate

The study protocol was approved by the institutional review boards of Kyoto college of Nursing (approval no. 202003). Informed consent was obtained from all study participants.

Human and Animal Rights

No animals were used in this research. All human research procedures were followed in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2000.

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Conflict of Interest

The authors declare no conflict of interest, financial or otherwise.

References

1. Ministry of Health, Labour and Welfare (2022) Summary of results of the 2015 infant nutrition survey. [In Japanese].
2. World Health Organization (2022) Global strategy for infant and young child feeding.
3. Meek J, Noble L, (2022) Policy Statement: Breastfeeding and the Use of Human Milk, Pediatrics. 150: e2022057988.
4. Brown CR, Dodds L, Legge A, Bryanton J, Semenic S (2014) Factors influencing the reasons why mothers stop breastfeeding. Can J Public Health 105: e179-85.
5. Gillespie B, d'Arcy H, Schwartz K, Bobo JK, Foxman B (2006) Recall of age of weaning and other breastfeeding variables. Int Breastfeed J 9: 1-4.
6. Wakimoto H, Tanaka I (2019) Literature review of care during weaning - current status and issues regarding the care of mothers and infants at the end of breastfeeding in japan. The Journal of the Japanese Society for Breastfeeding Research. 13: 86-97. [In Japanese].
7. Ministry of Health, Labour and Welfare (2019) Guide of supporting breastfeeding and weaning. [in Japanese].
8. Nakada K (2021) Effectiveness of a breastfeeding program for mothers returning to work in Japan: a quasi-experimental study. Int Breastfeed J 16: 6.
9. Shinike R, Tateoka Y (2016) Feeling of mothers who participated the lecture on weaning and support which midwives are required to provide: Practice reports of the lecture on weaning. Shiga Journal of Maternal Health.16: 11-18. [In Japanese].

10. Stacey D, Légaré F, Lewis K, Barry MJ, Bennett CL, et al. (2017) Decision aids for people facing health treatment or screening decisions. Cochrane Database Syst Rev 4: CD001431.

11. O'connor A (1996) User manual-Decisional Conflict Scale.

12. Matsunaga Y (2002) Ambiguity mother on termination of breastfeeding. Journal of Japan Academy of Midwifery. 16: 48-57. [In Japanese].

13. Hauck YL, Irurita VF (2003) Incompatible expectations: the dilemma of breastfeeding mothers. Health Care Women Int 24: 62-78.

14. Kawamura M, Tabuchi N (2018) Experience of mother who have completed natural weaning. Journal of Wellness and Health Care. 42: 95-103. [In Japanese].

15. Kawaguchi T, Azuma K, Yamaguchi T, Soeda H, Sekine Y, et al. (2013) Development and validation of the Japanese version of the decisional conflict scale to investigate the value of pharmacists' information: a before and after study. BMC Med Inform Decis Mak 13: 50.

16. Légaré F, Kearing S, Clay K, Gagnon S, D'Amours D, et al. (2010) Are you SURE?: assessing patient decisional conflict with a 4-item screening test. Can Fam Physician 56: e308-14.

17. Legare F, Leblanc A, Robitaille H, Turcotte S (2012) The decisional conflict scale: moving from the individual to the dyad level. Z Evid Fortbild Qual Gesundhwes. 106: 247-252.

18. Linder SK, Swank PR, Vernon SW, Mullen PD, Morgan RO, et al. (2011) Validity of a low literacy version of the Decisional Conflict Scale. Patient Educ Couns 85: 521-524.

19. O'Connor AM (1995) Validation of a decisional conflict scale. Med Decis Making 15: 25-30.

20. Japanese Association of Lactation Consultants (2015) Breastfeeding Support Standard. 2nd ed. Tokyo: Igaku shoin. 496 [In Japanese].

21. Japan Midwives Association Special Committee for Examination of Breastfeeding Support Service Standards (2016) Baby and mother-friendly breastfeeding support in pictures: a practical guide for midwives on "10 articles for successful breastfeeding and beyond". Tokyo: Japan Association of Midwives Press. 72 [In Japanese].

22. Shishido E, Osaka W, Henna A, Motomura Y, Horiuchi S (2020) Effect of a decision aid on the choice of pregnant women whether to have epidural anesthesia or not during labor. PLoS One. 15: e0242351.

23. Nakagawa M, Ohta H, Shimabukuro R, Asaka Y, Nakazawa T, et al. (2021) Daytime nap and nighttime breastfeeding are associated with toddlers' nighttime sleep. Sci Rep 11: 3028.

24. Matsunaga Y (2003) How mother change and make a new start in the last stage of breastfeeding. Bulletin of the Japanese Red Cross Hiroshima College of Nursing. 3: 95-102. [In Japanese].

25. Fujioka N, Yamashita N, Noguchi S, Matsuo S (2019) Breastfeeding continuation factors for primiparas: Findings from 18 month old child health check-up. Maternal Health. 60: 22-30. [In Japanese].

26. Jahanfar S, Ng CJ, Teng CL (2013) Antibiotics for mastitis in breastfeeding women. Cochrane Database Syst Rev 2: CD005458.

27. Michie C, Lockie F, Lynn W (2003) The challenge of mastitis. Arch Dis Child 88: 818-821.

28. Nakao Y, Miyahara H (2000) Consideration of breastfeeding support from the last direct breastfeeding period. Bulletin of the School of Allied Medical Sciences, Nagasaki University. 13:155-157. [In Japanese].

29. Ishihara O, Jwa SC, Kuwahara A, et al. (2020) Assisted reproductive technology in Japan: A summary report for 2018 by the Ethics Committee of the Japan Society of Obstetrics and Gynecology. Reprod Med Biol 20: 3-12.

30. Sayakhot P, Carolan-Olah M (2016) Internet use by pregnant women seeking pregnancy-related information: a systematic review. BMC Pregnancy and Childbirth. 16:65.

31. Gavine A, Shinwell SC, Buchanan P, et al. (2022) Support for healthy breastfeeding mothers with healthy term babies. Cochrane Database Syst Rev 10: CD001141.