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Women's experiences of breastfeeding during pregnancy: a Turkish descriptive study

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Abstract

Background Breastfeeding is generally terminated when the mother becomes pregnant again within two years because there is no clear consensus on how to manage breastfeeding during pregnancy. Additionally, health professionals may not have accurate information about this issue. This study aimed to determine women's attitudes towards breastfeeding during pregnancy and why they stopped breastfeeding when they became pregnant.

Methods This study is a descriptive one, involving pregnant mothers with a breastfeeding infant under 2 years old ($n = 101$). The participants were followed up regarding those who had given birth to a new child and chosen the BDP. The researchers surveyed them after birth. The data were collected using a survey form that included a total of 26 questions created by the researchers, which aligned with the existing literature. Data were collected using a questionnaire that included information about maternal, neonatal, and obstetrical data, as well as breastfeeding experience and problems encountered during pregnancy. Data were handled and analyzed using IBM SPSS Statistics v22.0 (SPSS Inc., Chicago, IL, USA).

Results The mean age of the mothers was 29.3 years ($SD \pm 4.9$), gravidity was 3.2 ($SD \pm 1.7$), and parity was 2.5 ($SD \pm 1.1$). The mean age of the breastfed children was 12.6 months ($SD \pm 5.3$) when the mothers became pregnant again. The reasons for stopping breastfeeding were professional advice (35%, $n = 34$), their own decision (30%, $n = 30$), believing that breastfeeding could have adverse effects on the unborn baby, and social pressure (16%). Only 5% ($n = 5$) of mothers continued breastfeeding between 7 and 9 months after pregnancy.

Conclusions Our results indicate that when a mother wishes to breastfeed during pregnancy, providing breastfeeding counseling by healthcare professionals with accurate information is essential to sustain lactation and maintain the well-being of the breastfeeding child without harm to the unborn baby.

Keywords Breastfeeding during pregnancy, Breastfeeding, Pregnancy, Lactation, Human milk

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Background

Breastfeeding is the ideal standard for feeding newborns [1]. The World Health Organization (WHO), the American Academy of Pediatrics (AAP), and the United Nations Children's Fund (UNICEF) recommend that newborns be exclusively breastfed for the first six months. Safe, adequate, and complementary (solid) foods should be introduced alongside breastfeeding until the age of two [2, 3]. Breastfeeding provides significant economic, environmental, and both short- and long-term benefits for maternal and infant health [4–6]. Promoting breastfeeding and family planning are widely accepted strategies to enhance maternal and child health [7]. As mothers become more aware of breastfeeding benefits, their duration often increases. As a result, mothers are more likely to breastfeed their babies if they become pregnant again within two years [8].

In practice, breastfeeding usually stops when the mother becomes pregnant again within two years [5, 6]. However, in most cases, if there is no risk to either the mother or the fetus, WHO recommends that breastfeeding continue [9]. During this period, the mother may face several issues, such as fear of miscarriage, fear of premature birth, and social pressure. When breastfeeding occurs during pregnancy, there is often a strong cultural taboo in society against continuing to breastfeed. Mothers who continue breastfeeding often face criticism and social stigmatization [1, 5, 6, 10].

It is unclear whether breastfeeding during pregnancy (BDP) leads to adverse pregnancy outcomes [11]. BDP has unintended effects that are not yet fully understood. Some earlier studies highlight the benefits, while others point out potential risks. Major concerns with BDP include fetal growth restriction, increased risk of preterm birth and miscarriage, alterations in milk quantity and composition, and depletion of the mother's nutritional reserves [12, 13]. Moreover, stopping breastfeeding early may increase risks such as infectious diseases, obesity, developmental delays in infants, and health issues for the mother. There is still a need for targeted educational programs for mothers and healthcare providers to encourage breastfeeding during pregnancy [14, 15]. Research on BDP suggests that caution should mainly be exercised for women at risk of preterm birth and miscarriage [16]. Additionally, according to Sinkiewicz-Darol et al. (2021), tandem breastfeeding did not show diurnal variations in the individual components of mothers' milk [1]. These findings could support promoting longer-term breastfeeding, including tandem breastfeeding.

There is no clear consensus on managing breastfeeding during pregnancy, and healthcare professionals lack accurate information about the benefits of BDP. These issues and concerns make it difficult for physicians to recommend and support BDP [1, 17]. There is a need for

evidence-based interventions to increase healthcare professionals' confidence and enable them to provide practical training and counseling on this topic [18]. Therefore, obstetricians, midwives, pediatric nurses, and lactation consultants need strong evidence to decide whether mothers should continue or stop BDP [6]. This study aims to describe a cohort of women's attitudes and beliefs regarding BDP, including those who continued BDP and their reasons for stopping breastfeeding during this period, and to raise awareness for future research to support BDP.

Methods

Setting and study sample

This descriptive study was conducted at the Gynecology and Obstetrics Clinic in Istanbul, Türkiye. A priori, a G*Power 3.1.7 analysis was performed to determine the appropriate sample size for our study. Considering the small effect size (0.1) and the limited number of studies on mothers who continued BDP, the minimum sample size was calculated to be 158, with a 5% margin of error and an 80% confidence level, using the one-group sign test [19]. The study sample included 131 mothers who agreed to participate and were selected, as we were only able to contact 131 mothers due to difficulties in locating those meeting the sample criteria. Subsequently, 30 mothers were excluded from the sample because they did not breastfeed during pregnancy. Ultimately, 101 mothers were included in the analysis.

Inclusion and exclusion criteria

The participants were followed up to identify those who had given birth to a new child and chose the BDP. Other inclusion criteria included the ability to read and write in Turkish, being 18 years or older, having no mental disorder or medical condition that would likely prevent breastfeeding, and having delivered a healthy child. Mothers who did not accept the informed consent form were also excluded from the sample.

Data collection

Data were collected from March 5, 2022, to December 31, 2022. The data were gathered using a survey form that included 26 questions created by the researchers, which aligned with the existing literature. The survey contained multiple-choice questions with various options for women to select, as well as open-ended questions. It collected background information about the mothers' characteristics, obstetric history, characteristics of breastfeeding infants, duration of BDP, rates and reasons for stopping BDP, and breastfeeding-related situations during pregnancy. A pilot study was conducted with ten women to assess the applicability of the survey. After this pilot, no changes were necessary for any of the questions.

Table 1 Characteristics of mothers and their babies (N= 101)

| Item | Variables | n | % |
|-----------------------------|---------------------|-----|-----|
| Mother's educational status | Primary education | 56 | 55 |
| | Secondary education | 24 | 24 |
| | College | 21 | 21 |
| Mother's profession | Housewife | 75 | 74 |
| | Worker | 9 | 9 |
| | Civil servant | 9 | 9 |
| | Self-employment | 8 | 8 |
| | Total | 101 | 100 |

| Item | Mean ± SD | Min-max |
|---|-------------|-----------|
| Age of the mothers, years | 29.5 ± 4.9 | 19 40 |
| Number of pregnancies | 3.2 ± 1.7 | 1 12 |
| Number of births | 2.5 ± 1.1 | 1 7 |
| Mother's pre-pregnancy body weight, kg (n = 99) | 65.8 ± 13.0 | 45 120 |
| Mother's body weight at birth, kg (n = 100) | 78.0 ± 13.6 | 55 140 |
| Age of the breastfeeding child at birth, months | 13.9 ± 3.9 | 9 23 |
| Baby's gestational age, week | 38.1 ± 1.9 | 30 41 |
| Baby's birth weight, g | 3245 ± 556 | 1415 4380 |
| Baby's birth length, cm | 48.0 ± 3.9 | 33 57 |

The survey was administered face-to-face in the patients' rooms under appropriate conditions, and the researcher documented the verbal responses. Completing the study took approximately 10 to 15 min.

Data analysis

Data were handled and analyzed using IBM SPSS Statistics v22.0 (SPSS Inc., Chicago, IL, USA). Kurtosis and skewness values were examined to assess whether the research variables exhibited a normal distribution. In the relevant literature, a normal distribution is considered valid when the kurtosis and skewness values of the variables fall within the ranges of ± 1.5 and ± 2.0, respectively. It was concluded that the variables demonstrated a normal distribution. Appropriate descriptive statistics were used to characterize the study populations. Categorical variables were presented as frequency (%), and other variables were reported as mean ± SD and range. Results were measured at a 95% confidence interval.

Ethical consideration

Ethical approval was obtained from the Istanbul University, Istanbul Faculty of Medicine Non-invasive Clinical Research Ethics Committee (decision no. 782160; date: 4 March 2022). Informed consent was obtained from all participants. The study adhered to the principles of the Declaration of Helsinki.

Results

Characteristics of mothers and babies

Table 1 summarizes the characteristics of mothers who breastfed during pregnancy and their babies. The average

Table 2 Attitude of mothers regarding BDP (N= 101)

| Question | Answer | n | % |
|---|--|----|----|
| Was the pregnancy planned? | No | 86 | 85 |
| | Yes | 15 | 15 |
| Do you think breastfeeding protects against pregnancy? | No | 92 | 91 |
| | Yes | 4 | 4 |
| | I do not know | 5 | 5 |
| How often did you breastfeed your baby per day when you became pregnant? | 2 times | 6 | 6 |
| | 3 times | 2 | 2 |
| | 4 times | 7 | 7 |
| | 5 times and above | 86 | 85 |
| What was the status of night-time breastfeeding before your pregnancy? | No, not breastfeeding at night | 2 | 2 |
| | Yes | 99 | 98 |
| Did you continue breastfeeding until the end of current pregnancy? | No | 98 | 97 |
| | Yes | 3 | 3 |
| Did your milk supply decrease after becoming pregnant? | No | 66 | 65 |
| | Yes | 35 | 35 |
| Would you have continued breastfeeding while pregnant if you knew it was "not harmful"? | I would have continued to breastfeed until the baby was two years old. | 93 | 92 |
| | I am not sure. | 4 | 4 |
| | I would still wean off breastfeeding. | 4 | 4 |

Table 3 Duration of BDP (N= 101)

| Item | n | % | |
|---|------------------|----------------|----|
| Breastfeeding duration while pregnant | 0–3 months | 79 | 78 |
| | 4–6 months | 17 | 17 |
| | 7–9 months | 5 | 5 |
| | Mean ± sd | Min-max | |
| The duration of breastfeeding after conception (months) | 2,6 ± 2,0 | 1 9 | |

age of the mothers in the study was 29.3 years (SD ± 4.9); 55% had only primary education, and 74% were housewives. The average number of pregnancies was 3 (SD ± 1.7), and the average number of deliveries was 2 (SD ± 1.1). Additionally, the mean gestational age of the newborns was 38.1 weeks (SD ± 1.9), and their average birth weight was 3245 g (SD ± 556).

Mothers' breastfeeding attitude during pregnancy

The questions and answers, which aim to understand the practices and thoughts of the women participating in the study regarding breastfeeding before and after pregnancy, are presented in Table 2. 65% of mothers reported that their milk supply did not decrease after becoming pregnant, and 92% said they could have continued breastfeeding if they had been informed that BDP was acceptable.

Duration of breastfeeding during pregnancy

Table 3 shows the breastfeeding durations of women during pregnancy. Most mothers breastfed during the first 3 months of pregnancy (78%), with an average

breastfeeding duration of 2.6 ± 2.0 months throughout pregnancy. Only three mothers continued breastfeeding for the entire pregnancy. There were 13 preterm births in the study group. Just one of these mothers, who breastfed for seven months or more, had a preterm birth at 36 weeks of gestation.

Rates and reasons for stopping breastfeeding during pregnancy

The rates and reasons why mothers stop breastfeeding are listed in Table 4. Being pregnant and doctors' recommendations were the main reasons for mothers to cease BDP.

Discussion

Currently, there is a lack of comprehensive data on BDP in clinical practice settings. This gap in evidence creates challenges for healthcare professionals supporting and counseling women who decide to continue breastfeeding while pregnant [1, 17]. In response to these limitations, several international evidence-based guidelines exist for managing BDP in practice [1, 6, 12, 18, 20].

In the study by Ayrim et al. (2014), no intrauterine growth restriction was observed in fetuses of mothers who either breastfed or did not during pregnancy [5]. Sengül et al. (2013) examined mothers who breastfed throughout pregnancy ($n = 39$) and those who stopped breastfeeding before pregnancy ($n = 22$). This study reported that the average birth weight of babies born to mothers who breastfed was significantly lower than that of babies born to mothers who did not; however, there was no significant difference in obstetric complications between the two groups [21]. Other similar studies have found no significant difference in birth weights between babies of breastfeeding mothers and those of non-breastfeeding mothers [10, 22–24]. Merchant et al. (1990) showed that the decline in fetal weight among mothers who received adequate nutritional support early in pregnancy could be offset by the third trimester. A comparative study involving 133 mothers revealed that babies of mothers who breastfed during pregnancy weighed 125 g less at one month postpartum compared to those whose mothers did not breastfeed. Researchers noted that babies should be monitored again after one month, as a one-month follow-up period may be too brief [24]. Our findings showed an increase in maternal weight toward the end of pregnancy compared to pre-pregnancy measurements, which aligns with expected physiological changes. The mean birth weights and gestational ages of the infants were within normal ranges. Within the limits of this observational study, no clear evidence was found to indicate that BDP use negatively affected maternal weight gain or neonatal birth weight. However, given the small sample size and lack of randomization, these

Table 4 Rates and reasons for stopping BDP

| Item | Variables | n | % |
|---|--|----|----|
| What is the primary reason for stopping breastfeeding? (n: 90) | "I am pregnant (I quit by myself)" | 30 | 33 |
| | "Doctor recommended" | 32 | 35 |
| | "The baby left breastfeeding on its own." | 6 | 7 |
| | "My milk supply has decreased/I used formula." | 6 | 7 |
| | "Effect of older family members/can be a sin/can be poison for baby, etc." | 16 | 18 |
| Has anyone suggested that you stop breastfeeding? (n:101) | Yes | 71 | 70 |
| | No | 30 | 30 |

results should be interpreted cautiously. Larger-scale, well-controlled studies are necessary to better understand the potential effects of BDP on fetal growth and maternal outcomes.

Some studies suggest that nipple stimulation during breastfeeding may promote oxytocin release and potentially induce uterine contractions [25, 26]. This has raised concerns about the risk of preterm birth or miscarriage. However, since oxytocin receptors mainly become active in late pregnancy, the biological significance of this mechanism remains uncertain [12, 27]. In this study, no control group was included; however, only a single preterm birth (at 36 weeks) was recorded among mothers who breastfed for seven months or longer. The mother had several well-known risk factors, such as advanced age, obesity, high parity, and a history of cesarean sections, which may have contributed to the outcome. Therefore, we cannot establish a direct link with BDP. Additionally, considering all limitations, the findings do not provide strong evidence that BDP is reliable in all cases. All results should be viewed as preliminary and interpreted with caution.

In our study, breastfeeding was not found to be an effective contraceptive method, as 85% of pregnancies were unplanned. Consequently, 91% of mothers did not view breastfeeding as a reliable way to prevent pregnancy. Most breastfeeding mothers reported no significant health issues during pregnancy and stated that their milk supply remained stable (65%). These findings agree with those of Madarshahian and Hassanabadi (2012), who found no notable differences in pregnancy outcomes between women who breastfed during pregnancy and those who did not [22]. Conversely, while physiological changes during pregnancy can influence milk production and composition, potentially affecting the breastfeeding infant, [28] a recent study found that 66% of women noticed a decrease in milk supply during pregnancy. However, these observations are primarily based on personal perception, highlighting the need for further research to understand better how pregnancy affects lactation [21, 29]. In our study, mothers' breastfeeding

frequency before pregnancy (85%, five times per day) and during nighttime (98%) was high. The mothers also stated that they would have continued breastfeeding until the age of two if they had received counseling (92%). In contrast, the average duration of BDP was 2.6 ± 2.0 months. Early discontinuation can cause adverse effects, such as nutritional and developmental problems in the infant, as well as maternal health issues [14, 15]. Breast milk provides essential nutrients and immunological protection that support infants optimal growth and immune system development [14]. Early discontinuation of breastfeeding increases the risk of malnutrition, infections, and impaired cognitive development in infants. In contrast, longer durations of exclusive breastfeeding are associated with a reduced risk of overweight and obesity, while rapid infant growth is also [2, 14]. Therefore, supporting breastfeeding and addressing barriers that lead to early cessation are essential for promoting both short- and long-term child health.

Recent studies have shown that prenatal and postnatal counseling is crucial in maintaining BDP [22]. A study observed that women who received breastfeeding counseling during the prenatal period were more sensitive and willing to breastfeed their babies exclusively with breast milk for the first six months [8]. It is recommended that health professionals guide mothers on breastfeeding and support those with babies younger than 2 years of age [5]. According to studies, healthcare professionals need to clearly understand the impact of breastfeeding on pregnancy and inform pregnant women before making recommendations [21]. Breastfeeding provides several health benefits for mothers, and it enhances maternal self-efficacy, supports mental well-being by reducing postpartum depression symptoms [30]. It also offers protection against several chronic diseases, such as cancers and type 2 diabetes, highlighting its importance for maternal health [14, 30]. Breastfeeding also helps strengthen maternal–infant bonding through hormonal and emotional mechanisms [15]. These benefits highlight the importance of supporting and encouraging breastfeeding practices for maternal health as well as infant well-being. Although supportive, our results are limited in their ability to generalize counseling and advice for the continuation of BDP. In practice, when breastfeeding and pregnancy overlap, breastfeeding is often interrupted due to the influence of cultural taboos and lack of knowledge [31]. Beyond these practical factors, mothers also face emotional and psychological challenges such as anxiety, guilt, and confusion about breastfeeding's effect on their previous child [18]. Social pressure and cultural expectations regarding “good motherhood” may heighten these feelings [32]. Therefore, our findings should be understood within the broader psychosocial context of

maternal decision-making. Future studies could further explore these psychological aspects across different cultures.

In line with similar attitude, 33% of mothers stopped breastfeeding on their own. Providing education to women during pregnancy and lactation on optimal breastfeeding practices is crucial, as it will support the successful continuation of breastfeeding. Unfortunately, some of our mothers stopped breastfeeding due to advice from health professionals. Therefore, it is essential to provide counseling on the benefits, risks, and available data regarding the safety of BDP, as well as support for healthcare professionals managing BDP [12, 18, 19]. Incorporating extended breastfeeding consulting lectures into university programs for medical doctors and nurses would be beneficial. Furthermore, addressing gaps in healthcare professionals' knowledge through in-service training programs at hospitals will enhance their competence in breastfeeding counseling [29].

In this study, 70% of mothers reported stopping based on advice from healthcare professionals, societal pressures, and cultural taboos (Table 4). The findings also show that a significant number of mothers stopped breastfeeding their previous children due to external factors, even though there were no issues with breastfeeding. Given these observations, when breastfeeding occurs during pregnancy, the decision to continue or stop BDP should be individualized and made by the mother following evidence-based counseling [12]. As most mothers stated, “If I had known it was not harmful, I would have continued breastfeeding.”

Further research, primarily randomized controlled trials, is needed to fully understand the physiological, pathological, and psychosocial effects of BDP [12, 13, 33]. When mothers decide to continue breastfeeding while pregnant, personalized counseling focused on proper maternal nutrition and close medical monitoring should be essential parts of care to protect both mother and baby [5]. Additionally, breastfeeding supports and aligns with several United Nations Sustainable Development Goals [34]. According to the Academy of Breastfeeding Medicine (ABM) (2024), breastfeeding during the perinatal period can be normalized when appropriate counseling is provided to mothers. ABM also recommends individualized risk assessments in managing BDP [35]. In line with this, our study indicates that with proper support and guidance, many women are willing to continue BDP. These findings highlight the importance of evidence-based counseling and the need for healthcare systems to address potential barriers to ongoing BDP.

Strengths and limitations

A key strength of this study is its focus on BDP, a condition for which there is currently no clear consensus on

management. However, several limitations should be acknowledged. The findings are based on self-reported experiences of participating women, and the absence of a control group limits the ability to establish causal relationships. The reliance on voluntary participation may have introduced selection bias. Additionally, data were collected from a single hospital, which restricts the generalizability of the results. To enhance the robustness and relevance of future research, studies involving multiple centers across diverse geographic and demographic settings are recommended.

Conclusion

The present study revealed that mothers engaging in BDP possess limited knowledge about the practice, highlighting the need for tailored interventions, comprehensive educational programs, and strong support systems to raise awareness of BDP within hospital settings. It is essential to identify and address factors leading to the discontinuation of BDP, including inadequate maternal knowledge, healthcare professionals' recommendations, and socio-environmental pressures. Developing and implementing unified, evidence-based international guidelines for BDP management is crucial. These guidelines, along with personalized counseling, are vital in supporting the continuation of BDP. Future research should further explore these factors and assess how improved support structures impact clinical environments.

Abbreviations

| | |
|--------|------------------------------------|
| WHO | The World Health Organization |
| AAP | The American Academy of Pediatrics |
| UNICEF | The United Nations Children's Fund |
| BDP | Breastfeeding during pregnancy |
| ABM | Academy of Breastfeeding Medicine |

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Authors' contributions

A.C. conceived the study, participated in study design, performed data analysis and drafted the manuscript. Z.I. participated in study design and reviewed the manuscript. N.Y. participated in study design and reviewed the manuscript. N.E. participated in study design and reviewed the manuscript. S.B. participated in study design, performed data analysis and reviewed the manuscript. All authors read and approved the final manuscript.

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Data availability

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was approved by the ethics committee of Istanbul University, Istanbul Faculty of Medicine Non-invasive Clinical Research Ethics Committee (decision no: 782160- date: 4.03.2022). Volunteer mothers who agreed to participate in the study were included. Informed consent was obtained from all participants. On the consent page, the mothers were informed about the

purpose of the study. All personal information will be kept confidential. The Declaration of Human Rights was adhered to throughout the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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