

# Breast Cancer Risk Reduction by Parity and Breastfeeding, Islamic Perspective; A Case Control Study

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## Abstract

**Introduction:** Verses in Holy Quran; 233 surat Al-Baghare , 15 Al-Aghaf , 14 Loghman and 6 Al-Talagh, breastfeeding, gravidity, and parity recommended to the parents and expected their children to be accountable to the parents; particularly to mothers due to tolerate of pregnancy and breastfeeding duration.

**Methods:** The case-control study included 376 patients diagnosed between 2001- 2006 and control group were 425 people. Two groups matched by demographic variants and socioeconomic status. The data inserted into SPSS -16. Logistic regression models used to examine the relations of the breast cancer risk with reproductive factors. Odds ratio (OR) and 95% confidence intervals computed as measures of association from the logistic models. All p-values reported two -sided.

**Results:** The Cases were more likely to be non pregnant. The parous women had a lower risk than nulliparous. The number of children reduced the risk of breast cancer; however it was significant only for 1-3 parities. The breastfeeding results showed it was significantly protective against breast cancer comparison with never breastfeeding. The breastfeeding trend was significantly protective against breast cancer.

**Discussion:** The parity and breastfeeding were effective in reduction of breast cancer risk. The results confirmed the recommendations of the Holly Quran and the messengers of Allah that parity and breastfeeding, (Eighteen to twenty four months for a child) have the best protective effect against breast cancer.

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**Key Words:** Holy Quran, Parity , Breast feeding, Breast cancer

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## Introduction

In some verses in Holy Quran breastfeeding, gravity and parity are recommended to parents and expected children to be accountable to them , particularly to the mother because of the toleration of pregnancy period and duration of breastfeeding that are important issues for infant development.

In some verses, even duration of breastfeeding and the least and most of it, is clarified very well. Gravity and parity are also supported in Holy Quran and the relation of the pregnancy period and breastfeeding duration is obvious, which is another important issue to talk about.

“Mothers shall suckle their children for two full years that for such as desire to complete the breastfeeding duration and on the father shall be their maintenance and clothing, in accordance with

honorable norms. No soul is to be tasked except according to its capacity; neither the mother shall be made to suffer harm on her child’s account, nor the father on account of his child, and on the [father’s] heir devolve [duties and rights] similar to that. And if the couple desire to wean, with mutual consent and consultation, there will be no sin upon them. And if you want to have your children wet-nursed, there will be no sin upon you so long as you pay what you give in accordance with honorable norms, and be wary of Allah, and know that Allah sees best what you do[1].”

In this important verse(233;Al-Baghare) Allah noticed us that ever breastfeeding is fully recommended and the optimum duration of breastfeeding is two years for each child, also we can understand that family members - if father is not alive or available -are responsible to take care of

mother as whom that breastfeed the neonate. It is clear that critical point of message is the importance of ever breastfeeding for developing the community, children and their parents and it will be completed for two years as optimum of breastfeeding duration.

In another verse in Surat Al-Ahghaf [2] Allah says "we have enjoined man to be kind to his parents. His mother has carried him in travail, and bore him in travail, and his gestation and weaning take thirty months. When he comes of age and reaches forty years, he says 'My Lord! Inspire me to give thanks for your blessing with which you have blessed me and my parents, and that I may do righteous deeds which may please you, and invest my descendants with righteousness. I need I have turned to you in penitence, and I am one of the Muslims"

Here [2] the gestation and parity is supported by Allah and ask the children to be kind full to their parents and God, even until forty years old because mothers suffers during pregnancy and delivery which are basic needs for surviving the human beings. Also the verse says that breastfeeding duration at least should be twenty one months for a full term neonate, and if gestation period is less than 9 months the suckling duration should be more than twenty one months, however the duration of pregnancy and breastfeeding should not be less than thirty months. This means that the premature neonates need more breastfeeding duration rather than full terms and at least duration of breastfeeding for a full term neonate is 12 months.. In another verse Allah says about the importance of pregnancy and duration of breastfeeding which should not be less than twenty four months [3].

In the verse number six from Surat Al-Talaq again Allah support mothers particularly if they are pregnant or in lactation period [4], which means that pregnancy and lactation are fully accepted for human beings with beneficial outcomes.

There is a lot of speech from Mohammad the great (peace be upon him) and his family (Ahlolbait) about the importance of pregnancy, parity and breastfeeding. For example Mohammad Rasulolah (peace be upon him) in Nahjolfasahah[5] says " Aren't you ladies happy when you are pregnant from your spouse and he is satisfied by you, it looks like a person who fast whole day and awake whole night to pray God, and after delivery and breastfeeding each drop of her milk will give her spiritual reward equal to freedom seventy slaves in front of Allah"

Imam Sadegh (peace be upon him) says: The mothers during pregnancy, parity and breastfeeding are similar to soldiers who are fighting for the God

and if she dies during this period, she will get spiritual reward similar to a real martyr[6].

The importance of parity and breastfeeding for neonate is well known and documented, so we decided to carry out a case control research to show the effect of parity and breastfeeding on the health status of Iranian mothers particularly in reduction the risk of breast cancer [7].

## Materials and Methods

This is a case-control study with 801 subjects. The numbers of cases were 376 patients who were diagnosed as breast cancer between 2001 until 2006, and control group were 425 people who were divided into two groups: 1-subjects from hospitals or health centers with benign breast disease or referral subjects for breast check up which were 172 people, 2- and from the community with 253 subjects to reduce the bias; because the hospital based control group may not be representative of the normal population which cases were recruited, particularly if severity of disease and /or adjuvant disease is not comparable. The data were collected by a structured questionnaire filled for case and control group from documented sheets and telephone follow up or face to face interviewed by general practitioner and trained nurse. Two groups were matched by demographic variants and socioeconomic status, all of them were female, and male cases were deleted. The data inserted into SPSS -16 soft ware. logistic regression models were used to examine the relationship of breast cancer risk with reproductive factors. Odds ratio (OR) and 95% confidence intervals (CI) were computed as measures of association from the logistic models. All p-values reported are two -sided.

## Results

Among 801 women; there were 376 cases with breast cancer. Table 1 shows the demographic characteristics and some matched confounding variables; age , age at menarche , menopause, and history of abortion were matched statistically (P-value=0. 18, 0. 3, 0. 9, 0. 25 retrospectively), the number of singles, married, and post menopausal cases in case and control group were not significant statistically (P-value=0. 06, 0. 06, 0. 07 retrospectively).

Table 2 presents the distribution of gravity and parity with some effective confounding factors for cases and controls. Cases were more likely than controls to be non pregnant (p-value≤0. 001, OR=2. 05, CI=1. 4-3. 3), also the mean of pregnancies is higher (3. 4±2. 3) in control group rather than cases

**Table 1.** Demographic and some matched confounding factors in case and control groups

| Subject             | Case (%)  | Control (%) | P-value   | OR  | CI       |
|---------------------|-----------|-------------|-----------|-----|----------|
| Age(mean)           | 45.9±9.5  | 46.8±9.2    | 0.18(N.S) |     |          |
| Age at Menopause    | 46.4±5.7  | 46.3±6.5    | 0.90(N.S) |     |          |
| Age at Menarche     | 13.4±1.2  | 13.6±2.9    | 0.30(N.S) |     |          |
| Number of Menopause | 154(45.4) | 164(38.9)   | 0.07(N.S) |     |          |
| Abortion            | 115(30.5) | 146(34.3)   | 0.25(N.S) | 1.2 | 0.88_1.6 |
| Single              | 13(3.5)   | 27(6.4)     | 0.06(N.S) | 0.5 | 0.3_1.03 |
| Married             | 363(96.5) | 398(93.6)   | 0.06(N.S) | 0.5 | 0.3_1.03 |

**Table 2.** Evaluation of gravity and parity in breast cancer in case and control group

| Subject            | Case (%)  | Control (%) | P-value | OR   | CI        |
|--------------------|-----------|-------------|---------|------|-----------|
| Gravity            |           |             |         |      |           |
| None               | 78(20.7)  | 48(11.3)    | 0.0001  | 2.05 | 1.4-3.03  |
| 1-3                | 172(45.7) | 220(51.7)   | 0.089   | 0.7  | 0.59-1.04 |
| 4-6                | 102(27.1) | 123(28.9)   | 0.6     | 0.9  | 0.67-1.25 |
| ≥7                 | 24(6.4)   | 34(8)       | 0.4     | 0.78 | 0.45-1.35 |
| Average of Gravity | 2.9±2.2   | 3.4±2.3     | 0.001   |      |           |
| Parity             |           |             |         |      |           |
| None               | 81(21.5)  | 55(12.9)    | 0.001   | 1.8  | 1.3-2.7   |
| 1-3                | 202(53.7) | 267(62.8)   | 0.009   | 0.69 | 0.52-0.91 |
| 4-6                | 83(22.1)  | 90(21.2)    | 0.7     | 1.05 | 0.75-1.48 |
| ≥7                 | 10(2.7)   | 13(3.1)     | 0.7     | 0.87 | 0.38-1.99 |
| Average of Parity  | 2.4±1.8   | 2.8±1.8     | 0.003   |      |           |

(2.9±2.2, p-value=0.001). In parity status, the parous women had a lower risk than nulliparous women (p-value≤0.001, OR=1.8, CI=1.3-2.7). The number of children reduced risk of breast cancer, but it was only statistically significant (P-value: 0.009, OR=0.69, CI=0.52-0.91) for 1-3 parities. The mean of deliveries showed different rate between case and control group (2.4±1.8 and 2.8±1.8 with p-value=0.003).

Comparing ever versus never breastfeeding showed that it is significantly protective against breast cancer. Seventy percent (70%) of cases and 86% of controls had ever breastfeeding, 29.5% of cases and 14% of controls never breastfeed (p-value≤0.001, OR=0.39, CI=0.27-0.56). To assess the association between duration of breastfeeding and risk of breast cancer we compared two groups with interval of six months which showed

breastfeeding less than six months is not protective among two groups (p-value=0.02, OR=2.2, CI=0.27-0.56).

Only in control group 25-36 cumulative months breastfeeding was significantly protective against breast cancer (p-value=0.01, OR=0.54, CI=0.33-0.89). The trend of breastfeeding was significantly protective against breast cancer, breastfeeding more than six months consistently showed a trend towards decreasing risk of breast cancer with increasing duration of breastfeeding (Fig1). This decreased risk appeared to be duration-related, as mothers breastfeed for more than six months were at lower risk than women who breastfeed for shorter duration. This effect was essentially present in mothers who had breastfeed until 48 months and more than four years it was not significantly protective.

**Table 3.** Breastfeeding and duration of it in Case and Control group, excluding number of children

| Subject                    | Case (%)  | Control (%) | P-value | OR   | CI        |
|----------------------------|-----------|-------------|---------|------|-----------|
| Breastfeeding Duration (m) |           |             |         |      |           |
| Ever                       | 265(70.5) | 365(85.9)   | 0.0001  | 0.39 | 0.27-0.56 |
| Never                      | 111(29.5) | 60(14.1)    |         |      |           |
| Ever breastfeeding:        |           |             |         |      |           |
| 6>                         | 20(7.5)   | 13(3.6)     | 0.027   | 0.45 | 0.22-0.93 |
| ≥6                         | 245(92.5) | 352(96.4)   |         |      |           |
| 12>                        | 154(41)   | 92(21.6)    | 0.0001  | 0.39 | 0.29-0.54 |
| ≥12                        | 222(59)   | 333(78.4)   |         |      |           |
| 18>                        | 180(47.9) | 129(30.4)   | 0.0001  | 0.48 | 0.35-0.63 |
| ≥18                        | 196(52.1) | 296(69.6)   |         |      |           |
| 24>                        | 195(51.9) | 160(37.6)   | 0.0001  | 0.56 | 0.42-0.74 |
| ≥24                        | 181(48.1) | 265(62.4)   |         |      |           |
| 36>                        | 236(62.8) | 232(54.6)   | 0.02    | 0.7  | 0.54-0.95 |
| ≥36                        | 140(37.2) | 193(45.4)   |         |      |           |
| 48>                        | 263(69.9) | 286(67.3)   | 0.4     | 0.88 | 0.65-1.2  |
| ≥48                        | 113(30.2) | 139(32.7)   |         |      |           |

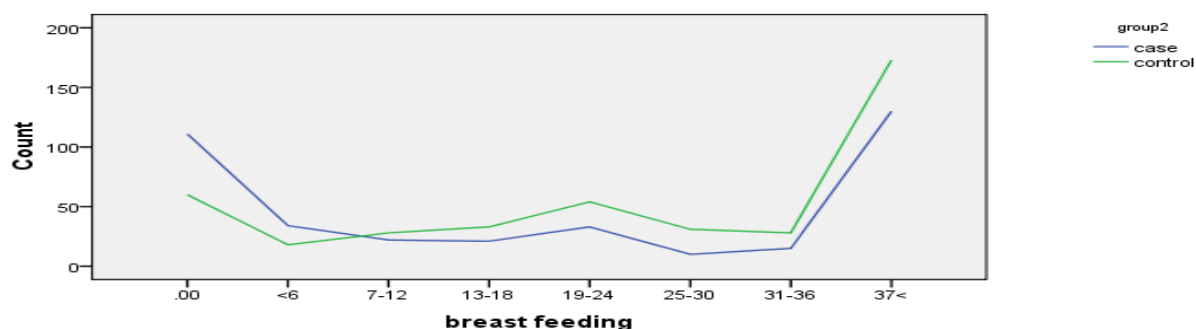
**Table 4.** Protective effect of duration of breastfeeding per child

| Subject | Case (%)  | Control (%) | P-value | OR   | CI        |
|---------|-----------|-------------|---------|------|-----------|
| 6>      | 88(29.9)  | 55(15)      | 0.001   | 4.2  | 2.5-6.8   |
| ≥6      | 206(70.1) | 312(85)     |         |      |           |
| 12>     | 135(45.9) | 134(36.5)   | 0.014   | 0.67 | 0.49-0.93 |
| ≥12     | 159(54.1) | 233(63.5)   |         |      |           |
| 18>     | 195(66.3) | 214(58.3)   | 0.035   | 0.7  | 0.52-0.98 |
| ≥18     | 99(33.7)  | 153(41.7)   |         |      |           |
| 24>     | 232(78.9) | 287(78.2)   | 0.83    | 0.96 | 0.66-1.4  |
| ≥24     | 62(21.1)  | 80(21.8)    |         |      |           |
| Mean    | 12.4±9.04 | 15.8±15.78  | 0.001   |      |           |
| 18>     | 195(66.3) | 214(58.3)   | 0.037   | 0.7  | 0.5-0.98  |
| 18-24   | 85(28.9)  | 133(36.2)   |         |      |           |

Table 3 presents this association without considering the number of pregnancies or children. Because of the importance of protective effect of duration of breastfeeding per a child we create table 4, which showed that breastfeeding, ≥12, ≥18 and ≥24 months per child is significantly effective for rising the

trend until 24 months and not more than that. (P-value 0.014, 0.035, 0.83 retrospectively).

The mean of breastfeeding for cases and controls was significant (12.4±9.04, 15.8±15.78, p-value=0.001). Because of high standard deviation (SD) for mean duration of breastfeeding, to find out a meaningful duration with an effective cut of point,



**Figure 1.** Trend of breastfeeding in case and control group

we calculated the effect of breastfeeding for a child comparing two period, less than 18 months and equal or more than 18 until 24 months, which statistically was significant ( $p\text{-value}=0.037, OR=0.7, CI=0.5-0.98$ ) for duration of 18-24 months per child.

## Discussion

It is more than fifty centuries that Allah (Jala va Ala) by special messengers such as Noah, Ibrahim, Muse, Jesus, and Mohammad (peace be upon them) guided people in right way not only in the spiritual road even in the routine life style. Based on Holy Quran at least in four famous verses [1-4] there are practical recommendations supporting pregnancy, delivery and breastfeeding; it is because of their importance and beneficence. In our study we try to show the effect of parity and breastfeeding on reduction the risk of breast cancer.

Nowadays some of the researches believe that the number of children does not make sense for protecting the mother from breast cancer [7], some find out that the risk of breast cancer in mothers with parity equal and more than four is higher than nonporous women [8], but many others revealed that nulliparity is a great risk for breast cancer and the number of children is a protective factor against breast cancer [9-11].

Many investigators confirmed the efficacy of ever breastfeeding and duration of it against breast cancer [9, 12, 13], and some studies accept it with definite cut of point of breastfeeding from less than 6, 12 or 24 months or even more [9, 14-17]; also some studies find out that breastfeeding did not have a protective effect against breast cancer [8, 10]. In our study the parity and ever breastfeeding and trend of it were significantly effective against breast cancer. Theoretically it is well known the anatomical and physiological changes during pregnancy, parity

and breastfeeding which enable mothers to reduce breast cancer risk. For example, parity and breastfeeding may lead to differentiation of mammary cells, and contributes the differentiation of breast tissue particularly during the first full term pregnancy. Also parity and lactation period reduce the number of ovulatory cycles which will reduce the risk of breast cancer particularly in young mothers [11], that possibly reduced estrogen and increased prolactin production, which may decrease a women's cumulative exposure to estrogen, thereby inhibiting the initiation or growth of breast cancer cell. It has also been suggested that a protective effect of breastfeeding in reduction of breast cancer may be attributed to the excretion of carcinogenic agents from breast ductal tissue through breastfeeding [10]. In our study based on this hypothesis in two matched case and control group, the full term pregnancy and parity significantly reduced the risk of breast cancer comparing with non pregnant and nulliparous women. The best result gained with 1-3 full term pregnancies and parities. This relationship is complex, but epidemiologically confirmed that each birth reduces the relative risk of breast cancer for 7%, in the absence of breastfeeding and each child breastfeed corresponds to a 3.4% decreased risk, and each additional birth and breastfeeding will decreased the risk of breast cancer [9]. We, as the others [11], believe that this may be a physiological difference between a woman who has one child and breastfeed for 24 months, or a woman who has four children and breastfeed each of them for 6 months; so we divided the breastfeeding duration with 6 months interval and showed that the best cumulative duration of breastfeeding for reducing the risk of breast cancer is 25-36 months, and never breastfeeding is a great risk comparing with ever breastfeeding. Also it was confirmed that cumulative breastfeeding equal and more than 4 years is not

statistically effective against breast cancer. Breastfeeding for each child less than 6 months and more than 24 months did not reduced the risk of breast cancer, and the duration of 18-24 months of breastfeeding was the best duration and most effective against breast cancer among Iranian women. Here we are not trying to confirm Allah message with our knowledge but all of these results, confirmed the recommendations of Holly Quran and his messengers that parity(particularly one to three) and breastfeed each child for twenty four months and not less than 18 months has the best protective effect against breast cancer.

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None

## Conflict of Interest

The authors declare that they have no conflict of interest in this article.

## Authors' Contribution

AME, AA designed the study and wrote the paper RZ analyzed the study while HA, ATA, MAR, EMM contributed to the data collection and data entry.

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