

Evaluation of Postpartum Stress in Breastfeeding and Non-breastfeeding Mothers of Kathmandu, Nepal

Kharel Sushil (1)

Raut Binod (2)

Mainalee Mandira (3)

(1) Assistant Professor, Department of Physiology, Kathmandu Medical College and Teaching Hospital

(2) Assistant Professor, Department of Pharmacology, Kathmandu Medical College and Teaching Hospital

(3) Community Social Worker, Nepal

Corresponding author:

Dr. Sushil Kharel

Assistant Professor, Department of Physiology, Kathmandu Medical College and Teaching Hospital, Nepal

Email: drsushilkharel@gmail.com

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Abstract

Background: Breastfeeding physiologically plays a vital role in establishing the attachment relationship between child and mother. Breastfeeding is considered a protective factor for postpartum stress. This study was carried out in an urban Nepalese population to compare the prevalence of stress between breastfeeding and non-breastfeeding mothers.

Methods: A cross-sectional study was conducted at Kathmandu Medical College, Nepal, from August 2019 to January 2020. After obtaining informed written consent, 81 breastfeeding and 81 non-breastfeeding mothers between two to four months postpartum were enrolled in the study through random sampling. Perceived stress was evaluated by using universally accepted COHEN PERCEIVED STRESS SCALE (CPSS-10). The mothers were given a questionnaire which was completed by them individually. Results were analyzed by calculating Mean \pm SD, using Student's t test and ANOVA test.

Results: A total of 162 mothers (81 breastfeeding and 81 non-breastfeeding) were studied. The mean COHEN PSS score was 15.74(SD 2.36) for breastfeeding and 26.24(SD 3.78) for non-breastfeeding mothers. There was a significant difference in prevalence of stress between breast feeding and non-breast feeding mothers ($P < 0.05$).

Conclusion: Levels of perceived stress were high in non-breastfeeding mothers as compared to breastfeeding mothers.

Key words: Postpartum, Perceived stress, Breastfeeding

Introduction

Breast feeding (BF) has significant benefits for mothers and infants. To achieve optimal health and well being of newborns, World Health Organization (WHO) has prescribed exclusive BF for the first six months of an infants' life (1). Breastfeeding tendency is considered as important for the infant for their better development and growth. Therefore, the ability of women to produce breast milk was also important. Based on the existing report, the production of milk is related with stress and depression (2). The postpartum period exposes the mother to various challenges and demands. This period is regarded as a vulnerable time for maternal psychological health (3). Mothers experience the physical demands of recovering from childbirth, feeling exhausted and uncomfortable. Most of the time, mothers are able to take care of their infant and adapt to a new role and affection within the family members (4). Breastfeeding provides many health benefits for the mother and her child. Breast milk is the best food for a newborn baby, which contains almost all the nutrients infants need for normal growth and development. Breastfeeding promotes facial development as a result of the suckling reflex, prevents different types of food allergies, and enhances the child's neurophysiologic development. Breastfed children are at lower risk for diabetes mellitus types I and II, obesity, hypertension, and cardiovascular diseases later in life (5). In addition to the nutritional benefits of breast milk, breastfeeding is a unique stimulant for mother and baby. During breastfeeding, the mother gives the baby a feeling of warmth, safety, and protection. Establishing intimate emotional attachments in childhood is seen as the prevention of various later undesirable behaviors in a child, various addictions and unsocial activities (6). Stress level is related to a person's physiological features. Elevated heart rate, reduced skin resistance and hypertension are the remarkable changes that can be found under stressful conditions (7). Postpartum anxiety disorders (PPAD) are found in 4%–39% of pregnant women and 16% of women in the postpartum period (8). PPAD increase the risk of postpartum depression and have been associated with maternal low self-confidence, low self-efficacy in the parenting role, stress and difficulty in caring for the infant. Also, it has been discovered that women with PPAD breastfeed for shorter periods of time and are less likely to breastfeed exclusively. In the offspring, PPAD have been linked to early complications (insecure attachment behavior, delayed cognitive development, negative attitude), and later adverse child development (low social engagement) (9). The hormones (Lactogenic hormones, oxytocin and prolactin) produced during breastfeeding are associated with anti-stress, anti-depressant and anxiolytic effects (10). Some studies have suggested that breastfeeding has a protective effect on maternal psychological health because it attenuates stress responses (11, 12).

Methods

A community based cross sectional study was conducted in August 2019-January 2020 after getting ethical clearance and approval from the Institutional Review Committee (IRC) of Kathmandu Medical College. The study populations were the postpartum mothers (two to four months postpartum) of Kathmandu and Bhaktapur. A total number of 162 mothers (81 breastfeeding and 81 non-breastfeeding) (22 to 37 years) were enrolled in the study. Three different wards of Bhaktapur and Kathmandu were selected by random sampling. Participants were asked to complete demographic, obstetric data questionnaires and Cohen Perceived Stress Scale (CPSS-10) which was translated into Nepali language. Demographic and obstetric data questionnaires contained maternal age, employment history, educational level, economic status, previous history of stress, type of delivery, number of previous pregnancies and infant gender satisfaction. After 10 minutes of resting, Blood Pressure (BP) was recorded twice in left arm of each mother in sitting position; with 10 minutes interval between two recordings and mean value was taken. Blood pressure was recorded using a mercury Sphygmomanometer. The appearance (phase I) and disappearance (phase V) of Korotkoff sounds were considered for systolic and diastolic BP, respectively (13). The participants were asked to sign a consent form before taking any form of data for the research. They were told to complete the questionnaire sincerely. COHEN PERCEIVED STRESS SCALE (CPSS-10) was used to learn the perceived stress (14).

Individual scores on the PSS range from 0 to 40 with higher scores indicating higher perceived stress.

- ▶ Scores ranging from 0-13 were considered as low stress.
- ▶ Scores ranging from 14-26 were considered as moderate stress.
- ▶ Scores ranging from 27-40 were considered as high perceived stress

The collected data was analyzed statistically by SPSS Version 21. Statistical significance was assessed at a type I error rate of 0.05.

Results

The total sample size of the study was 162 (81 Breastfeeding and 81 Non-breastfeeding) mothers. The age of the studied population ranged from 22 to 37 years. The mean postpartum CPSS Score was 15.74(SD 2.36) for breastfeeding and 26.24(SD 3.78) for non-breastfeeding mothers. Table 3 shows the distribution of postpartum stress in the study population. The overall prevalence of postpartum stress among breastfeeding mothers was 28.39% (moderate and high). Among non-breastfeeding

mothers the prevalence of postpartum stress was 65.53%. Difference between stress in breastfeeding and non-breastfeeding mothers was found significant ($p < 0.05$). Most of them had vaginal delivery (breastfeeding -72% and non-breastfeeding-74%) and negative previous history of stress (Table 1). In our study, the mean Blood Pressure (both SBP and DBP) in non-breastfeeding mothers was high as compared to breastfeeding mothers and statistically significant with a 'p' value of 0.02 (Table 4 and Figure 2). Most of our study populations were aged between 20 and 30.

Table 1: Demographic profile of Breastfeeding (BF) and Non-breastfeeding (Non-BF) mothers

VARIABLES	BF No	Percentage (%)	Non-BF No	Percentage (%)	P Value
Age (Years)					
20-30	66	81.48	68	75.3	0.40
30-40	15	18.52	13	24.7	
Educational Status					0.017
Middle school	02	02.46	03	03.70	
High School	19	23.46	20	24.70	
College	48	59.26	45	55.55	
University	11	13.58	09	11.11	
Illiterate	01	01.24	04	04.94	
Employment					
Employed	61	75.30	58	71.60	
Non-employed	20	24.70	23	28.40	
Economic Status					
High	13	16.05	15	18.51	
Medium	50	61.72	47	58.02	
Low	18	22.23	19	23.47	

Table 2: Obstetric data of the study population (Breastfeeding and Non breastfeeding mothers)

VARIABLES	BF No (N=81)	Percentage (%)	Non-BF No (N=81)	Percentage (%)
Delivery Type				
Vaginal	58	71.60	60	74.07
Cesarean Section	23	28.40	21	25.93
Previous Delivery				
One	32	39.50	20	24.69
Two	07	08.64	08	09.87
Three or more	02	02.48	05	06.18
None	40	49.38	48	59.26
Infant Gender satisfaction				
Yes	66	81.48	59	72.83
No	15	18.52	22	27.17
Previous History of Stress				
Yes	02	02.48	03	03.71
No	79	97.52	78	96.29

Table 3: Prevalence of perceived stress in the study population (Breastfeeding and Non breastfeeding mothers)

Score and grade of Stress (out of 40)	Breastfeeding (N=81)	Non-breastfeeding (N=81)
Low Stress CPSS score 0-13	58 (71.60%)	28 (34.56%)
Moderate Stress CPSS score 14-26	15 (18.51%)	37 (45.67%)
High Stress CPSS score 27-40	08 (09.89%)	16 (19.77%)

Table 4: Distribution of mean blood pressure in the study population.

Mean Blood Pressure	Breastfeeding (N=81)	Non-breastfeeding (N=81)	P Value
Mean Systolic BP in mmHg	119.1 ±11.52	132.3 ±14.73	0.02
Mean Diastolic BP in mmHg	75.3 ± 8.14	87.4 ± 9.78	

Figure 1: Comparison of Perceived Stress (COHEN Perceived Stress Scale-CPSS) in Breastfeeding and Non-breastfeeding mothers

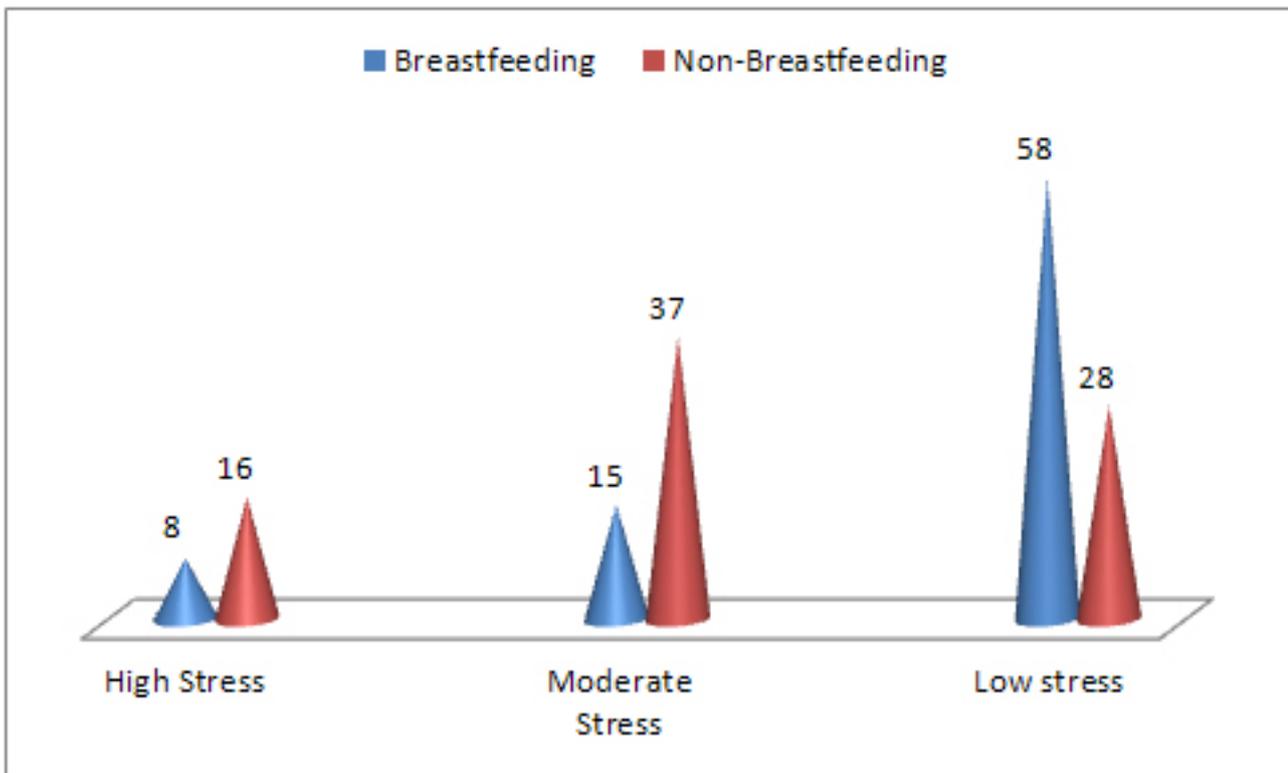
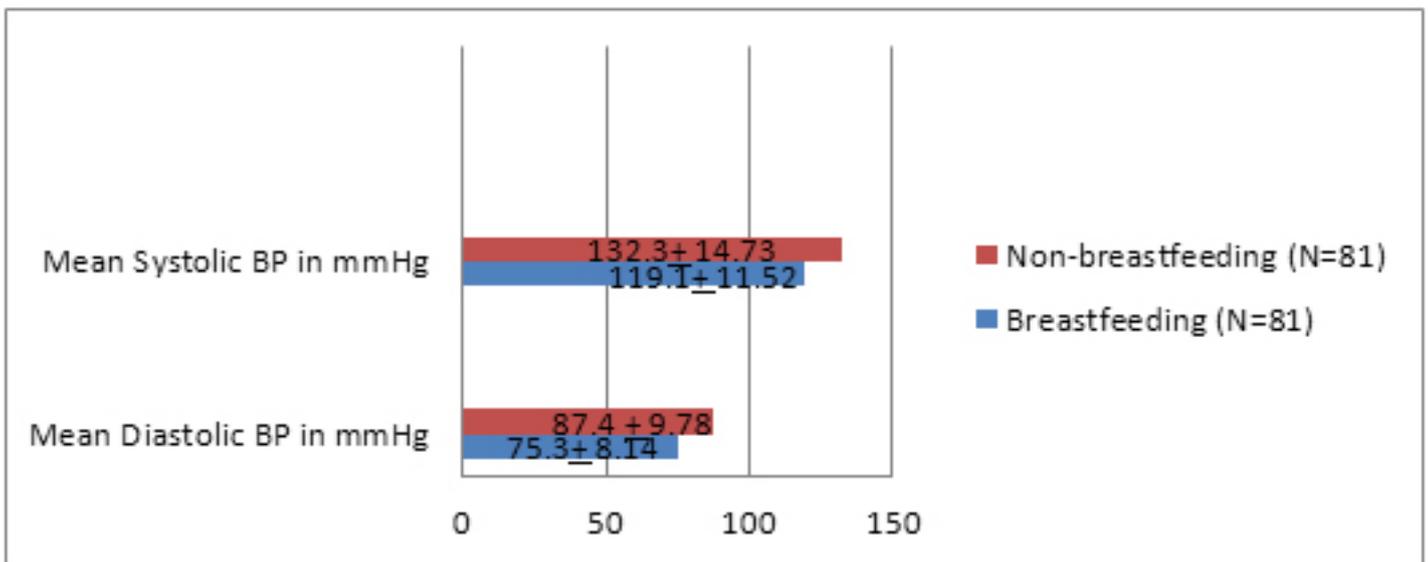


Figure 2: Comparison of Mean Blood Pressure in Breastfeeding and Non-breastfeeding mothers



Discussion

In our study, prevalence of postpartum stress in non-breastfeeding mothers was significantly higher than in breastfeeding mothers. The present study proposed a wider classification for postpartum stress, to include measures of not only stress, but also hypertension as well. Our study revealed that non-breastfeeding mothers have high postpartum stress (26.24+SD 3.78) as compared to breastfeeding mothers (15.74 + SD 2.3). In the similar study done by Thome et.al they investigated that postpartum depressive symptoms and parenting stress were related to exclusive breastfeeding in mothers at 2-3 months postpartum. They found that depressive symptoms were related to lower levels of exclusive breastfeeding and that exclusive breastfeeding was more likely with higher level of maternal education (15). In another study done by Abou-Saleh MT et al. they also found that BF mothers have significantly lower levels of stress and depression symptoms. Sixty two postpartum women were screened for depression by the Edinburgh Postnatal Depression Scale (EPDS) after delivery and 34 of them were assessed by the Present State Examination (PSE) at 8 +/- 2 weeks after delivery and found that postpartum women had a significantly greater level of cortisol, prolactin, thyroxine and oestrogen than non-puerperal women (16). Galler JR et al. assessed 226 mothers worrying about infant or lactation related to depression and found that women who believed that BF was better than bottle feeding at seven weeks postpartum were more likely to continue BF up to six months postpartum, having less depression at seven weeks and six months postpartum (17).

Conclusion

Our results suggest that stress may be higher in non-BF mothers as compared to exclusive BF mothers. The postpartum is associated with significant stressors, and excessive stress poses a threat to maternal, child, and family well-being. It is important to determine if postpartum physiology plays a role in the mother's stress response. This study focuses on a need for early recognition, diagnosis and intervention in postpartum non-breastfeeding women so that future complications can be avoided.

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Conflict of the interests

None

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