Breastfeeding Self-efficacy and Postnatal Depressive Symptoms: A Cross-sectional Study among Postnatal Women

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ABSTRACT

Background

Breastfeeding self-efficacy predicts breastfeeding success. Studies shows that although mothers recognize its importance, many lack adequate knowledge of proper breastfeeding practices.

Objective

To assess breastfeeding self-efficacy and postnatal depressive symptoms and compare the breast-feeding efficacy score differences with selected variables and postnatal depressive symptoms among postnatal mothers.

Method

A cross- sectional study was conducted from 1st-28th August 2022 among 109 postnatal mothers in postnatal ward of Dhulikhel Hospital. The postnatal mothers were selected by convenience sampling method. Data collection was done by using structured questionnaire through interview method. Descriptive statistics (frequency, percentage, median and interquartile range) and inferential statistics (Mann Whitney U test and Kruskal Wallis test) were used.

Result

There was total 109 postnatal mothers. The median breastfeeding self-efficacy score was 55 with interquartile range 59 and 51. Nearly one fourth (21.1%) of postnatal mothers had presence of depressive symptoms. The mean overall Edinburgh Postnatal Depression Scale score was 9.37 (SD = 2.89; ranging from 1 to 18). The study showed higher breastfeeding score among age above 30 years, who received prenatal health information about breastfeeding, having previous experience of breastfeeding and who decided to breastfeed before childbirth.

Conclusion

The study showed that more than half of postnatal mothers had high median score of breastfeeding self-efficacy and nearly one fourth of postnatal mothers had presence of depressive symptoms. There was statistically significant difference between mothers' age, received prenatal health information about breastfeeding, previous experience of breastfeeding and time of decision to breastfeed with breastfeeding self- efficacy score.

KEY WORDS

Breastfeeding, Depressive symptoms, Self-efficacy, Postnatal

INTRODUCTION

Breast feeding for the first 6 months of life is the ideal start for babies.[1] Breastfeeding protects mothers from ovarian cancer and breast cancer, reduces the probability of disease, helps the retrogression of the uterus and reduces blood loss.[1-3] Regarding infant, breast milk works as a shield against infections and reduces the mortality and morbidity rates in infants.[4,5]

Despite the significant advantages of breastfeeding, not all women initiate breastfeeding.[6] The prevalence of exclusive breastfeeding was 57.2% only in Nepal.[7] The lower prevalence of breastfeeding may be due to lack of knowledge, confidence, and skill in regard to breastfeeding.[8] The chances of cessation of exclusive breastfeeding decreases when maternal confidence on breast feeding increases.[9]

Bandura defines self-efficacy as the "belief of the individual in his/her ability to deal with facts which affect his/her life".[10] Breastfeeding self-efficacy is defined as the woman's trust in her ability to breastfeed. It is a salient variable in the initiation and duration of breastfeeding and is the most influential factors in maternal satisfaction.[11-13] Breastfeeding self-efficacy has been proved to be a protective factor for exclusive breastfeeding, while postpartum depression is a risk factor.[9] The issue of postnatal depression is as important one as it is the most common mental illness associated to childbirth worldwide.[14] The relationship between postnatal depression and breastfeeding, although established, still remains unclear and not conclusive.[15,16] Hence it is imperative to assess the breastfeeding self-efficacy and its associated sociodemographic and obstetric variables and postnatal depressive symptoms.

METHODS

A quantitative cross sectional study design was conducted from August 1 to August 28, 2022. The study was conducted among postnatal mothers admitted in postnatal ward of Dhulikhel Hospital. Confidentiality was maintained by not revealing the information received and identity of participants and using the information only for study. Non probability, convenience sampling technique was used to select 109 (including 10% for non-response rate) postnatal women by using the formula $n=Z^2pq/d^2$ where allowable error was 5% and prevalence was 94%.[17] The inclusion criteria were postnatal mothers who had given birth to live healthy baby either vaginally or through caesarean. Postnatal mothers whose baby were admitted in NICU and who were contraindicated for breastfeeding was excluded.

A self-constructed semi-structured questionnaire was developed by principal investigators for section I which consisted of socio-demographic and obstetric information. Section II consisted Breastfeeding Self-Efficacy Scale – Short Form (BSESSF) The BSES-SF is a commonly used self-report instrument, derived from the original 33-item BSES, which measures the mother's self-efficacy in her ability to breastfeed. The scale consists of 14 items with positive statements. All statements are preceded by the phrase "I can always …" and rated on a 5-point Likert scale, ranging from 1 = "not at all confident" to 5 = "very confident". The total score of the scale was calculated as the mean score of all items. A higher total score is indicative of a greater level of maternal breastfeeding self-efficacy. In the original study, the reported Cronbach's alpha coefficient was 0.94, suggesting good internal consistency reliability.[18] Section III consisted the validated Nepali version of Edinburgh Postnatal Depression Scale (EPDS). The Nepali version of EPDS is acceptable, and it presents good validity with sensitivity of 92, specificity of 95.6, positive predictive value of 77 and negative predictive value of 99.3.[19] The EPDS is a 10-item self-report questionnaire. Questions 1, 2 and 4 score as 0, 1, 2 and 3 according to the increasing severity of the symptoms. Questions 3, 5 - 10 are reverse, scored as 3, 2, 1 and 0. Total score was calculated by adding each score of the 10 items. The score ranges from 0 to 30.[20] The cut-off score of ≥ 12 was used to determine the postnatal depressive symptoms.[19] The reliability of the instrument, as measured by Cronbach's alpha, was 0.742, indicating an acceptable level of reliability.[21]

Ethical approval was obtained from Institutional Review Committee (IRC approval no. 138/22). The permission was taken from the head of department of gynecology and obstetrics. Then, the respondents were informed about objectives of the study. Informed consent was obtained from respondent and subject was reassured about confidentiality prior to data collection. Data collection was done using structured and semi structured questionnaire by face-to-face interview. The participation was voluntary and the completed response was included in the study.

The data gathered was checked for accuracy and its completeness. Sample number was provided for each questionnaire. Then data was coded and entered in Excel sheet, which was transferred to SPSS version 25 later. Descriptive statistics such as frequency, percentage, mean, standard deviation was used. Results of the normality test indicated that the data did not follow a normal distribution. Hence, Mann Whitney test and Kruskal Wallis test was used for assessing significance between breast feeding self-efficacy and selected variables. and postnatal depressive symptoms.

RESULTS

Normally distributed data were summarized using the mean, whereas non-normally distributed data were presented using median in the result section.

Table 1 shows that the mean age of postnatal mothers was 26.16 ± 4.57. Out of total of 109 postnatal mothers, more than two third (68.80%) were age group of 20- 29 years.

Table 1. Socio-demographic Characteristics of Postnatal Mothers (n =109)

Characteristics	Frequency (f)	Percentage (%)
Age group (mean age 26.16±4.57)		
< 20 years	7	6.40
20 - 29 years	75	68.80
≥ 30 years	27	24.80
Education attainment		
Illiterate	1	0.90
Non formal	6	5.50
Basic level	10	9.20
Secondary level	71	65.10
Higher education	21	19.30
Occupation		
Housemaker	68	62.40
Agriculture	16	14.70
Student	2	1.80
Labor	1	0.90
Business	4	3.70
Service holder	18	16.50
Type of family		
Extended	4	3.70
Joint	75	68.80
Nuclear	30	27.50

In terms of education attainment, more than three fifth (65.10%) of postnatal mothers had education of secondary level education and a few (0.90%) of postnatal mothers had never been to school. Similarly, more than three fifth (62.40%) of postnatal mothers were housemaker. More than two third (68.80%) of postnatal mothers belongs to joint family.

Table 2 shows that nearly four fifth (79.80%) of postnatal mothers had a prenatal visit of 8 and more. Nearly half (45%) of postnatal mothers had get information about breastfeeding during pregnancy period. Similarly, nearly three fifth (57.80%) of postnatal mothers had given birth vaginally. Majority (99.10%) of postnatal mothers had given birth at term and had breastfeed exclusively during hospital stay. Likewise, nearly half (49.50%) of postnatal mothers had previous experience of breastfeeding and more than three fifth (64.20%) of postnatal mothers had decided to breastfeed their baby only after childbirth.

Table 3 shows that median breastfeeding self-efficacy score was found to be 55 and interquartile range 59 at Q3 and 52 at Q1. The possible lowest score was 14 and highest score was 70.

Table 4 shows that nearly one fourth (21.1%) of postnatal mothers had presence of depressive symptoms. The mean overall EPDS score was 9.37 (SD = 2.89; ranging from 1 to 18).

Table 2. Obstetric and Breastfeeding Related Variables of Postnatal Mothers (n= 109)

Characteristics	Frequency (f)	Percentage (%)
Number of prenatal visits		
< 8	22	20.20
≥ 8	87	79.80
Received prenatal health information about breastfeeding		
No	60	55.00
Yes	49	45.00
Mode of childbirth		
Vaginal	63	57.80
Cesarean	46	42.20
Gestational age		
Pre term	1	0.90
Term	108	99.10
Infant feeding pattern		
Mixed feeding	1	0.90
Exclusive breastfeeding	108	99.10
Previous experience of breastfeeding		
Yes	54	49.50
No	55	50.50
Time of decision to breastfeed		
Before childbirth	39	35.80
After childbirth	70	64.20

Table 3. Breastfeeding Self-efficacy among Postnatal Mothers (n= 109)

Characteristics	Median (Q3, Q1)	Possible Score
Breastfeeding self-efficacy score	55 (59,51)	14-70

Table 4. Postnatal depressive symptoms among Postnatal Mothers (n= 109)

Characteristics	Frequency (f)	Percentage (%)
Absence of depression (≤ 11)	86	78.9
Presence of depression (≥ 12)	23	21.1
Mean ± SD(9.37±2.89)		

Table 5 shows that the comparison of median breastfeeding self- efficacy score with socio-demographic and obstetric variables and postnatal depressive symptoms. There was significant difference between breastfeeding self- efficacy and age of postnatal mothers. Mother's age group of ≥ 30 years were more likely to report higher breastfeeding self-efficacy score 57 (59, 54) compared to mother's age group of < 30 years. Regarding the education attainment, there is no significance difference were found with breastfeeding self-efficacy as p value (0.129) was greater than the critical value (0.005) at 95% CI. Similarly, there is no statically significant difference between breastfeeding self-efficacy and occupation as p value (0.117) was greater than the critical value (0.005) at 95% CI. It was found that there was

Table 5. Comparison of Differences between Breastfeeding Self-efficacy and Related Sociodemographic and Obstetric variables and Postnatal Depressive Symptoms (n=109)

Characteristics	Median (Q1,Q3)	p value
Age group		
< 20 years	50(51,48)	
20 - 29 years	55(59,51)	0.001**
≥ 30 years	57(59,54)	
Education attainment		
Illiterate	48(48,48)	
Non formal	57.50(51,59)	
Basic level	54(58.25,52.25)	0.129**
Secondary level	55(59,51)	
Higher education	58(59,54.50)	
Occupation		
Homemaker	55(58,51)	
Agriculture	54(62.50,51)	
Student	61.50(61.50,61.50)	
Labor	53(53,53)	0.117**
Business	59.50(61,56.50)	
Service holder	57(52.75, 59)	
Type of family		
Extended	64(68.50,54.25)	
Joint	55(58,51)	0.092**
Nuclear	55.50(53, 59)	
Number of prenatal visit		
< 8	55.50(58.25,50.75)	0.431*
≥ 8	55(59,52)	
Received prenatal health information about breastfeeding		
No	54(58,50)	0.003*
Yes	57(59.50,54)	
Mode of childbirth		
Vaginal	55(58,52)	0.701*
Cesarean	55(59,50.75)	
Gestational age		
Pre term	54(54,54)	0.807*
Term	55(59,51)	
Infant feeding pattern		
Mixed feeding	55(59,51.25)	0.294*
Exclusive breastfeeding	50(50,50)	
Previous experience of breastfeeding		
Yes	57(59.25,54)	<0.01*
No	53(57,50)	
Time of decision to breastfeed		
Before childbirth	57(59,54)	0.020*
After childbirth	54(58.25,50)	
Postnatal depressive symptoms		
Absence of depressive symptoms	55(51,58.25)	0.508*
Presence of depressive symptoms	56 (51,59)	

Mann Whitney U test = *, Kruskal Wallis test = **, statistically significant difference (p<0.05)

no statically significant difference between breastfeeding self-efficacy and type of family where p value (0.092) was greater than the critical value (0.005) at 95% CI. Regarding the number of prenatal visits during pregnancy (0.431) of postnatal mothers, p value is more than critical value (0.05) at 95% CI. So, there is no significant difference between breastfeeding self-efficacy and prenatal visit during pregnancy. There was statistically significant difference between the breastfeeding self- efficacy score and received prenatal health information about breastfeeding as p value (0.003) was less than critical value at 95% CI. The median breastfeeding self-efficacy score was significantly higher among postnatal mothers who received prenatal health information about breastfeeding than who did not received prenatal health information about breastfeeding. There was no significant difference between breastfeeding self-efficacy and mode of childbirth as p value (0.701) is greater than the critical value at 95% CI. Similarly, there was no significant difference between breastfeeding self-efficacy with gestational age (0.807) and infant feeding pattern value (0.294) as p value is greater than the critical value at 95% CI. There was statistically significant difference between breastfeeding self- efficacy score and previous experience of breastfeeding as p value (< 0.01) is less than critical value at 95% CI. It was found that there was higher breastfeeding self-efficacy score among postnatal mothers who had previous experience of breastfeeding than no experience of breastfeeding. Likewise, there were significant difference between breastfeeding self- efficacy score and time of decision to breastfeed as p value (0.020) was less than the critical value at 95% CI. It was found that the median breastfeeding self-efficacy score was higher among postnatal mothers who decided to breastfeed their baby before childbirth than who were decided only after childbirth. There was no significant difference between breastfeeding self-efficacy and postnatal depressive symptoms as p value (0.508) is greater than the critical value at 95% CI.

DISCUSSIONS

The total median score of breastfeeding self-efficacy of the postnatal mothers in the study was found to be 55 with interquartile range 59 at Q3 and 51 at Q1. The results of the present study were compared with a study done in Laos reported the mean total BSES-SF score was 56 ± 8.22 which were close to the score obtained by this study.[22] It might due to that the studies conducted at similar types of hospital i.e. community hospital. Another study done in China revealed that mean total score of BSES-SF was 47.28 among Chinese mothers which was lower than in this study.[23] However, a study in Turkey reported the mean score of breastfeeding self- efficacy was 65.20 ± 9.3 which was higher than in this study.[24] The differences in mean total score of BSES-SF may be related to the use of different sample size i.e. 571 postpartum mothers, but in this study only 109 postnatal mothers were participated.

Nearly one fourth (21.1%) of postnatal mothers had presence of depressive symptoms. This finding is similar to study done in Dhulikhel which showed that there was prevalence of depressive symptoms in postnatal period to be 29%.[25]

There was significant difference between BSES-SF score and maternal age (p = 0.001). This result was similar to other study conducted in Laos (p =0.039) and in Greece in which older mothers tended to have higher the scale score than the younger postnatal mothers.[22,26] The reason for this may be that respondent were same mean age i.e. 26 years. But this result is inconsistent with the study conducted in Turkey (p = 0.781).[27] This difference might be due to the size of study population i.e. 152 postpartum mothers having baby 0-3 months while in this study only 109 postnatal mothers having baby only 24 hours 72 hours of birth. Study done in Turkey categorized the age in 5 categories while in this study only 3 age categorization was done.

In this study, no significant difference was found between the BSES-SF score and maternal education (p=0.129). This was similar to other study conducted in Turkey (p = 0.625). 27 However a relationship between the scale score and maternal education was showed in the study in Turkey (p =0.000).[24]

There was no significant difference between the BSES-SF score with occupation of postnatal mothers and type of family they belong to; which is similar with the study conducted in Lalitpur.[17] This might be due to both studies conducted in same country and among same socio-demographic background. But the result is inconsistent with the study conducted in India which shows that there is significant association between level of breastfeeding self-efficacy and occupation of respondents.[28] This difference might be due to different socio- demographic background of respondent and sample size i.e. 30. In my study sample size was more i.e. 109. Similarly, a study conducted in Turkey reported that there were statically significant differences between BSES-SF score and family type.[24]

Similarly, there was no significant difference between the BSES-SF score and number of prenatal visits during pregnancy (p= 0.431). Different result was found in the study conducted in Laos (p =0.021).[22] This might be due to difference in study site. My study site was limited to a hospital but in the study in Laos, it includes large areas i.e. 13 community health centers for data collection.[22]

In this study significance difference found between BSES-SF score and received prenatal health information about breastfeeding which shows higher the score among those postnatal mothers who received prenatal health information about breastfeeding during pregnancy period as compared to the postnatal mothers who did not receive prenatal health information about breastfeeding. Similar result shows in Turkey (p=0.000).[27] This could be because data collection period was same in all study i.e. early postpartum period.

There is no significant difference between mode of childbirth (p = 0.701) with BSES- SF score. The result is similar with the study conducted in Turkey (p= 0.358).[27] Although a study done in Cyprus revealed that there is association between BSES-SF and mode of delivery (p < 0.001).[29] This difference may be because of different study design i.e. longitudinal and sample size 586 which was fifth times than my sample size.

When the BSES-SF score was compared to gestational age, there was no significant differences (p = 0.807). This result was similar to the other study conducted in Greece (p =0.573).[26] This might be due to both studies were cross sectional and conducted in early postpartum period.

Similarly, there is no significant difference between BSES-SF and infant feeding pattern (p = 0.294). This result is inconsistent with the study conducted in Turkey (p = 0.000) and in Greece (p < 0.001).[26,27] These differences might be due to different study design i.e. longitudinal; cohort study design and study site includes nine maternity units study done in Greece while research design in study was cross sectional and limited in one tertiary level hospital.[26]

In this study significance difference was found between BSES-SF score and previous experience of breastfeeding (p < 0.001). This result was similar to the other study conducted in Turkey (p = 0.042) and in Greece (p=0.000).[26,27] In the studies conducted in Turkey and Greece, it was reported that mothers who had previous breastfeeding experience had higher breastfeeding self- efficacy.[26,27] The reason for this may be that similar study design i.e. cross-sectional, having similar socio-demographic and obstetric history. However a study conducted in Lalitpur, Nepal revealed that there is no significant association between breastfeeding self- efficacy with previous experience of breastfeeding (p =1.0).[17] This might be due to different timing period of data collection. In this study data were collected in early postpartum period where as in study in Lalitpur, data were collected among those mothers whose babies were born within one year.

When the BSES-SF score was compared to time of decision to breastfeed, there was significant difference (p= 0.020). This result is consistent with the result of study conducted in Greece (p < 0.001).[26] It was reported that the postnatal mothers who decided to breastfeed their baby before childbirth have higher the breastfeeding self- efficacy score than who decided only after childbirth. This could be because respondents were same and same data collection timing i.e. 24 hours to 36 hours after childbirth.

There was no significant difference between postnatal depressive symptoms (p=0.508) with BSES-SF score. These findings are in contrast to study conducted in Turkey (p < 0.001).[30] These differences may be due to the larger sample size (n = 357), which was approximately three times greater than that of the present study.

CONCLUSION

More than half of postnatal mothers had high median score of breastfeeding self- efficacy. Nearly one fourth (21.1%) of postnatal mothers had presence of depressive symptoms. According to the finding of this study mothers' age, received prenatal health information about breastfeeding, previous experience of breastfeeding and time of decision to breastfeed were statically significant difference with breastfeeding self-efficacy score. However, there is no statistically differences between breastfeeding self-efficacy with education attainment, occupation, type of family belongs to, number of prenatal visits, mode of childbirth, gestational age, infant feeding pattern and postnatal depressive symptoms. This study recommends for prenatal education about breastfeeding focusing the adolescent age group and mothers needs to be facilitated to attend antenatal classes on breastfeeding.

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