Study of breastfeeding performance index among infants less than 6 months age and its impaction on the infant morbidity in Cairo governorate, Egypt

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ABSTRACT

Background*:* Malnutrition typically affects infants under 6 months of age worldwide. A higher breastfeeding performance index (BPI) score reflects greater breastfeeding benefits.

Aim and objectives: to assess the breastfeeding practices using the breastfeeding performance index (BPI) in infants less than 6 months age and to identify factors associated with poor breastfeeding performance.

Subjects and methods: This is a cross sectional study that included 200 mothers and infant ≤ 6 months old, they were selected from Al- Zahraa University Hospital during the period from April to September 2023. Data was collected about the socio-demographic features, obstetric history and full feeding practices and medical history of infants and the seven components of the BPI. It was treated to identify the factors associated with poor breast-feeding

Results: According to the breastfeeding performance index (BPI) score, nearly half (49.0%) of the infants were in the medium category and (26.5%) had lower scores, only (24.5%) had optimal breastfeeding practice (high BPI category). The overall poor (low/medium) BPI score was (75.5%), the mean score of the BPI was found 4.3 (±1.4). About (24%) of the studied infants suffering from fever, (46%) suffering from cough with difficult or short rapid breathing and (13.5%) suffering from Diarrhea in the last two weeks.

Conclusions: The Breastfeeding Performance Index (BPI) can be used to determine the relationship between breastfeeding and infant morbidity outcomes, in addition to being a useful tool for identifying susceptible populations that may benefit from programs promoting breastfeeding

Keywords: breastfeeding, breastfeeding performance index, infant feeding, breast milk.

INTRODUCTION

For infants, breast milk provides the best nourishment. It is the most wonderful present a mother can offer her child. It is a crucial public health strategy for lowering newborn and child mortality as well as morbidity. The World Health Organization (WHO) describes optimal breastfeeding practices as beginning breastfeeding as soon as possible after delivery, exclusively breastfeed for the first six months of life ,continuing breastfeeding for up to two years ,and starting appropriate complementary feeding at age of six months old ***(Oot et al., 2015).***

The benefits of breastfeeding against a wide range of diseases and illnesses are well-supported by epidemiological research. In addition to providing an ideal nutritional supply, human milk contains bioactive substances that support the long- and short-term health advantages of breastfeeding. Surprisingly, a number of health outcomes have been linked directly to the length of breastfeeding, indicating a potential cumulative effect ***(Asare et al., 2018).***

Breastfeeding can help achievement many of the 17 Sustainable Development Goals (SDGs) for ending poverty and hunger, improvement of health, education, gender equality and combat climate change and stimulate economic growth. Being the superior, optimum, safest, cheapest source of infant nutrition and protection for the first 2 years of life ***(United Nation, 2015)*** .

After birth, the newborn develops latent protection against a variety of viruses and germs due to breast milk. Both local and systemic immunity are impacted by its diverse antibacterial, anti-inflammatory, and immune-development-promoting constituents, which include lactoferrin, human milk oligosaccharides, memory B and T cells, and secretory immunoglobulin A. Newborns benefit substantially from passive immunity and probiotics found in breast milk because they are more susceptible to disease and infection throughout their first few months of life ***(Daniela et al., 2021).***

Breast feeding performance index (BPI) is a tool developed by WHO to assess the progress of countries in promoting, protecting, and supporting breast feeding and to measure the outcomes of breastfeeding interventions. This index includes 7 infant feeding practices (initiation of breastfeeding, duration and exclusivity, pre-lacteal feeding, receiving liquids, receiving formula and receiving solids). The higher the breastfeeding performance index (BPI) the greater the advantages of breastfeeding will be ***(WHO, 2019).***

AIM OF THE WORK

To assess the breastfeeding practice using the breastfeeding performance index (BPI) in infants less than 6 months age and Identify factors associated with poor breastfeeding performance.

PATIENTS AND METHODS

Ethical considerations:

Ethical Scientific Committee of AL-Azhar University approved the study protocol and informed consents were taken from the parents before their enrollment in the study.

All data and results are kept confidential.

Caregivers of the participants have the right to refuse or withdraw from the study at any time.

The authors declare that they have no conflict of interests regarding the study or the publication

The study and the publication are self-funded.

Sample site and size:

The sample size was calculated according to the annual flow on the hospital nearly 600 infants less than 6 months age with prevalence of practicing breastfeeding (26%) ***(El-Gilany & Badawy, 2013)*** with confidence level (95%) and margin of error (5%) and power (80%) and it is estimated to be 200 infants.

Inclusion Criteria:

- Those eligible in the study were:
- Male and female sex.
- Healthy mothers &infants
- Infants less than /equal 6 months.
- Willing to participate.

Exclusion Criteria:

Infants were excluded if :

- They were diseased and/ or had any medical condition that interfere with breast feeding .
- They were more than 6 months.

Mothers were excluded if :

- They had any health problems and/or taking medicine and prohibited from breastfeeding by a doctor.
- They refused to complete the study questionnaire.

Study procedure :

All the studied mothers and infants were subjected to the following:

- ❖ Regarding mothers, they will be subjected to full social history as residence, educational level, socioeconomic status that measured by El-Gilany study 2012, religion, marital status, antenatal care visits, place of delivery, mode of delivery and post-natal visits .
- ❖ As regard the infant, they will be subjected to full feeding practices as (age in months, sex, current breastfeeding, liquids given, bottle feeding given, formula food given & solid food given) , and full medical history.

The Breastfeeding Performance Index (BPI) scoring system for infants under 6 months old includes seven components, with scores ranging from 0 (indicating poor performance) to 7 (indicating excellent performance). A main score of 5 is considered average. According to the World Health Organization ***(WHO, 2020),*** a higher BPI score reflects greater breastfeeding benefits.

The BPI is calculated by assigning one point for each of the following infant feeding practices:

1) Within an hour of delivery, the baby began to breastfeed.

2) Prelacteal feedings are not given for the first three days of life.

3) Not using bottles for the last twenty-four hours.

4) Breastfeeding throughout the previous day.

5) Not receiving water or water-based liquids (except for drops or syrups of vitamins, mineral supplements, or medicines) in the last 24 hours.

6) Not receiving formula milk or any other milk in the last 24 hours.

7) Not receiving solids or semi-solids in the last 24 hours.

(El-Gilany & Elwasify,2012)

Infants scoring 0–3 are classified as having a Low BPI, scores of 4–5 are considered Medium BPI, and scores of 6–7 are categorized as High BPI ***(Haile and Biadgilign, 2015)***. The lowest (low and medium) BPI scores are combined into one category, representing poor breastfeeding practice.

Statistical analysis

Version 16 of SPSS was used to conduct the analysis. The variables were compiled using descriptive statistical analysis. To compare the qualitative variables, the chi square test was utilized to calculate the proportions and frequencies. The ANOVA test was utilized to conduct comparisons between more than two groups after calculating the arithmetic means and standard deviations (SD) for every quantitative variable. The statistical significance level employed in the analysis was set at p values ≤0.05.

RESULTS:

Our results will be demonstrated in the following tables:

Table(1) demographic data of the studied mothers and infants

Characteristics	NO	%
Maternal residence		
-Urban	**200**	**100.0**
Maternal age groups (years)		
-Range	**18-40**	
-Mean±SD	**27.3± 5.9**	
Maternal age groups (years)		
<20	**12**	**6.0**
20-35	**161**	**75.5**
≥35	**37**	**18.5**
Current Marital status		
-Married (in union)	**198**	**99.0**
-Live alone	**2**	**1.0**
Maternal education		
-Illiterate	**17**	**8.5**
-Primary	**46**	**23.0**
-Secondary	**102**	**51.0**
-Higher	**36**	**17.5**
Maternal occupation		
-House wife	**171**	**85.5**
-Working	**29**	**14.5**
Age of infants (months) Mean±SD	**3.9± 1.4**	
Age group of infants (months)		
≤2	**47**	**23.5**
2 ≤ 4	**72**	**36.0**
4-6	**81**	**40.5**
Sex of infant		
-Male	**91**	**45.5**
-Female	**109**	**54.5**

Table (1) shows the demographic data of the studied mothers and infants.

Table (2): Feeding practices among infants aged 6 months and scoring system for the breastfeeding performance Index (BPI)

Practice (Score)	NO	%
First suckling		
- <1 hour (1)	**86**	**43.0**
- ≥1 hour (0)	**114**	**57.0**
Prelacteals in first 3 days		
- Not given (1)	**142**	**71.0**
- Given (0)	**58**	**29.0**
Current breastfeeding till 6 months		
- Yes (1)	**184**	**92.0**
- No (0)	**16**	**8.0**
Feeding bottle use		
- No (1)	**64**	**32.0**
- Yes (0)	**136**	**68.0**
Liquids		
- Not given (1)	**108**	**54.0**
- Given (0)	**92**	**46.0**
Formula/other milk		
- Not given (1)	**86**	**42.5**
- Given (0)	**115**	**57.5**
Solids		
- Not given (1)	**187**	**93.5**
- Given (0)	**13**	**6.5**
Breastfeeding performance Categories		
-Low (0-3)	**53**	**26.5**
-Average/ medium (4-5)	**98**	**49.0**
-High (6-7)	**49**	**24.5**
Overall BPI score Mean ± SD	**4.3±1.4**	

This table shows feeding practices among infants aged 6 months and scoring system for the breastfeeding performance Index (BPI).

Table (3): Difference between low &medium and high BPI scores among mothers of infants aged less than six months

Studied groups / Variables	Low BPI score 53		Medium BPI score 98		High BPI score 49		Significant test & P-value
	No.	%	No.	%	No.	%	
Maternal age groups (years)							
-<20	**2**	**3.8**	**7**	**7.1**	**3**	**6.1**	**X^2=5.4**
-20-34	**46**	**86.8**	**71**	**72.4**	**34**	**69.4**	**P=0.2**
-35 and above	**5**	**9.4**	**20**	**20.5**	**12**	**24.5**	
Current Marital status							
-Married (in union)	**52**	**98.1**	**97**	**99.0**	**49**	**100.0**	**X^2=0.9**
-Divorced/ Widowed	**1**	**1.9**	**1**	**1.0**	**0**	**0.0**	**P=0.6**
Maternal education							
-Illiterate	**0**	**0.0**	**6**	**6.1**	**11**	**22.4**	**X^2=25**
-Primary	**16**	**30.2**	**23**	**23.5**	**7**	**14.3**	**P=0.000***
-Secondary	**30**	**56.6**	**54**	**55.1**	**18**	**36.7**	
-Higher	**7**	**13.2**	**15**	**15.3**	**13**	**26.6**	
Maternal occupation							
-House wife	**45**	**84.9**	**90**	**91.8**	**36**	**73.5**	**X^2=8.9**
-Working	**8**	**15.1**	**8**	**8.2**	**13**	**26.5**	**P=0.012***
Age of infants (months) Mean ± SD	**4.8±1.2**		**3.6±1.4**		**3.4±1.2**		**F=19.6 P=0.000***
Age group of infants (months)							
≤2	**2**	**3.8**	**28**	**28.6**	**17**	**34.7**	**X^2=29**
2 ≤ 4	**14**	**26.4**	**39**	**39.8**	**19**	**38.8**	**P=0.000***
4-6	**37**	**69.8**	**31**	**31.6**	**13**	**26.5**	
Sex of infant							
-Male	**23**	**43.4**	**50**	**51.0**	**18**	**36.7**	**X^2=2.8**
-Female	**30**	**56.6**	**48**	**49.0**	**31**	**63.3**	**P=0.2**
Antenatal care checkup							
-Yes	**53**	**100.0**	**80**	**81.6**	**33**	**67.3**	**X^2=19.5**
-No	**0**	**0.0**	**18**	**18.4**	**16**	**32.7**	**P=0.000***
Place of delivery							
- Healthcare facility	**52**	**100.0**	**94**	**95.9**	**42**	**85.7**	**X^2=10**
- Home	**0**	**0.0**	**4**	**4.1**	**7**	**14.3**	**P=0.005***
Mode of delivery							
-Vaginal	**0**	**0.0**	**17**	**17.3**	**23**	**46.9**	**X^2=36**
-Cesarean section	**53**	**100.0**	**81**	**82.7**	**26**	**53.1**	**P=0.000***
Postnatal care checkup							**X^2=31.6**
-Yes	**52**	**100.0**	**93**	**94.9**	**34**	**69.4**	**P=0.000***
-No	**0**	**0.0**	**5**	**5.1**	**15**	**30.6**	
Infants suffering from fever							
-Yes	**25**	**47.2**	**21**	**21.4**	**2**	**4.1**	**X^2=26.6**
	28	**52.8**	**77**	**78.6**	**47**	**95.9**	**P=0.000***

Studied groups / Variables	Low BPI score 53		Medium BPI score 98		High BPI score 49		Significant test & P-value
	No.	%	No.	%	No.	%	
-No							
Infants suffering from cough with difficult or short rapid breathing **-Yes** **-No**	**42** **11**	**79.2** **20.8**	**41** **57**	**41.8** **58.2**	**9** **40**	**18.4** **81.6**	**X^2=39.3** **P=0.000***
Infants suffering from Diarrhea **-Yes** **-No**	**13** **40**	**24.5** **75.5**	**10** **88**	**10.2** **89.8**	**4** **45**	**8.2** **91.8**	**X^2=7.6** **P=0.022***

Table (3) shows Difference between low ,medium and high BPI scores among mothers of infants aged less than six months . **p≤0.05 is considered statistically significant**

According to the breastfeeding performance index (BPI) score, nearly half (49.0%) of the infants were in the medium category and (26.5%) had lower scores, only one fourth of the infants (24.5%) had optimal breastfeeding practice (high BPI category). The overall poor (low/medium) breastfeeding performance index (BPI) score was (75.5%), the mean score of the BPI was found 4.3 (±1.4).

For infants with high BPI score, it was found that most of them without history of fever (95.9%), cough or diarrhea (81.6%) or (91.8%) respectively, compared to low and medium BPI.

Table (٤): Logistic regression of analysis of the independent significant predictors of low/ Medium BPI

Factors	B	Wald	P- value	Exp(B)
Maternal education	**1.393**	**5.9**	**0.015***	**4.025**
Maternal age	**-2.211**	**4.9**	**0.025***	**0.110**
Maternal occupation	**4.7**	**13.6**	**0.000***	**0.009**
Age group of infants (months)	**-3.4**	**25.2**	**0.000***	**0.034**
Sex of infant	**1.8**	**7.5**	**0.006***	**6.028**

Table (٤) shows Logistic regression of analysis of the independent significant predictors of low/ Medium BPI:

In the final model of the multivariable logistic regression, it was found that low maternal education, unemployment, female infant, were significantly and independently associated positively with low breastfeeding. While, maternal and infant age were significantly and independently associated negatively with low breastfeeding.

DISCUSSION

The main goal of this cross-sectional study is to shed light on the prevalence of exclusive breastfeeding practices, evaluate breastfeeding effectiveness using the Breastfeeding Performance Index (BPI) and its impact on infant morbidity, as well as to identify the factors associated with exclusive breastfeeding practices among mothers in Cairo of infants ages 0 to 6 months ***(El-Gilany & Badawy, 2013)***.

The present study involved 200 mothers and their babies; the mothers' ages ranged from 20 to 35 years old, with a mean of 27.3 years. More than two-thirds of the mothers received secondary education and above, whereas less than one-third were in elementary school or could not read and write. In contrast, 85.5% not warking. The majority of the babies were born via cesarean section. The infants' mean (±SD) age was 3.9 (±1.4) months, with two-fifths of them falling between the 4 and 6 month age range.

As regards the BPI's components, breastfeeding practices like as "Early Initiation of Breastfeeding" (EIBF), which involves starting a mother's milk supply for newborns within an hour of delivery, are extremely important for public health ***(Gupta et al., 2019).*** In the current study, it was discovered that approximately 43.0% of the newborns received breast milk within an hour after birth. This finding is consistent with research by ***Hailu et al. (2020)*** in Ethiopia, who found that 44.9% of newborns began breastfeeding within an hour of delivery. ***El-Gilany & Badawy (2013)*** in Mansoura, Egypt, found that only 39.2% of mothers started breastfeeding on time. They explained their findings by pointing out that it is common practice to give babies water and sugar during the first week of life in order to clean their intestines.

This result also higher than studies conducted by ***Shaheen et al. (2018)*** in Menoufia, Egypt, and ***Tollah et al. (2020)*** among women attending primary health care units in Cairo, which found that only 2.7% and 5.55 percent, respectively, of mothers started breastfeeding within an hour after birth. Furthermore, studies by ***Mehlawat et al. (2020)*** in India and ***Shili et al. (2012)*** in a rural Uttarakhand area revealed that the percentages of initiation within the first hour were (29.7% & 21.3%), respectively.

Our results, however, may indicate that good knowledge of the importance of starting breastfeeding as soon as possible has been attained, since they were significantly higher than those of the Egypt Demographic and Health Survey (EDHS) (2023), which showed that about one-third started breastfeeding within the first hour. In contrast, Nepal (72%) and Sri Lanka (75%) had the greatest rates of early breastfeeding initiation ***(Tana, 2009).*** the high incidence of cesarean sections (80.0%) is the most likely reason for the delay in initiating breastfeeding. Also, anesthetic and post-surgical discomfort is a cause of the newborn to delayed breastfeeding.

Results of the present study showed that the practice was not exclusive, since over two-fifths of infants (46.0%) started receiving fluids other than breast milk. This finding is consistent with ***the Egypt Demographic and Health Survey "EDHS" (2023),*** which indicated that approximately forty percent of children under six months of age were exclusively breastfed. However, compared to other studies by ***Hailu et al. (2020)*** in Ethiopia and ***Tollah et al. (2020)*** in Cairo, which found that only (34.0% & 28%), respectively, were exclusively breastfed, this was greater.

About (29.0%) of the neonates in the current study received Prelacteal feed within three days after birth. This result was less than that of ***Uttarakh and Shili (2012),*** who discovered that newborns were given pre-lacteals like gripe water, sugar water, and honey was 61.8% . Additionally, according to the Egypt Demographic and Health Survey ***(EDHS), 2023***, 59% of newborns got pre-lacteals, which is higher than our findings and suggests that awareness is rising. In contrast to

our findings, ***Mehlawat et al. (2020)*** reported that in India, only 13% of babies received honey as part of a custom that was followed in the family.

The majority of infants in our study (92.0%) had breastfed within the previous 24 hours, indicating that they were currently breastfed. This result was similar to a study by ***Tollah (2020)*** that found 94.5% of the women attending Cairo's primary health care centers were breastfeeding. The prevalence was similar to other studies conducted in West Mamprusi (84.3%) and Ambo (82.2%) ***(Shitie et al., 2022).*** It was, however, greater than research conducted in Mansoura by ***El-Gilany & Badawy (2013)*** and in Somalia by ***Shitie et al. (2022),*** which discovered that the percentage of infants who were currently breastfeeding was 77% in Mansoura, 72% in Ghana, 70.5% in Halaba, 55% in Kenya Wajir, and 51.2% in Indonesia.

The current study showed that additional complementing foods were introduced early. Infants were exposed to fluids (46.0%), solids (6.5%), artificial formula or other milk (57.5%), and more than two thirds (68%) were bottle-fed. These results were in line with those of ***Mehlawat et al. (2020)*** in India, who found that roughly (45%) of the babies were fed feeds other than breast milk, with infant formula being given the most frequently (81.3%), semi-solid foods being given to 34.6% of babies, and bottle feeding being observed in 23.8% of infants.

This suggests that mothers are not aware of the right time to start complementary feeding. This could be explained by ***Shitie et al. (2022)*** who discovered that mothers in urban areas have more opportunities to work, with only 14.5% of the mothers in the current study working. This reduces the amount of time mothers can spend with their babies, which can compromise exclusive breastfeeding (EBF) practices. Alternatively, it could be because mothers in urban areas have greater access to other infant feeding options than mothers in rural areas.

In The current study, BPI score showed that just one-fourth (24.5%) of the newborns had optimal breastfeeding practices(high BPI category), with nearly half (49.0%) of the infants falling into the medium category and 26.5% had lower scores.

In the same line with ***Tamiru et al. (2012),*** who reported that the prevalence of optimum breastfeeding was 24.6% in an Ethiopian study. Furthermore, ***El-Gilany & Badawy (2013)*** reported from Mansoura that the percentage of newborns in the low group was 27.0%, the medium category was 41.7%, and the high category was 31.3%. These figures are greater than those found in the current study.

Conversely, our results were greater than those of ***Hussien et al. (2018),*** who reported on an Ethiopian study in which they discovered that 56.8% of women had low BPI scores, 25% had medium scores, and less than 5% had high BPI scores. Furthermore, research carried out in northern Ethiopia state by ***Hussien et al. (2018) and Gessese et al. (2022)*** revealed that 17.4% and 20.9% of mothers, respectively, had a high BPI.

The current study's mean BPI score was determined to be 4.3 (±1.4), with an overall poor (low/medium) BPI score of 75.5%.This outcome was somewhat comparable to ***a 2015 research by Haile and Biadgilign*** in Ethiopia, when 80% of babies had low / medium BPI scores. Additionally, the mean BPI scores of ***Senarath et al. (2007)*** and ***Gessese et al. (2022)*** in Ethiopia were 4.4± 1.77 and 5.15 ± 1.39, respectively. It was greater than that of a different study conducted in the northwest of Ethiopia by ***Hailu et al. (2020),*** which found that poor BPI scores were more common (40.7%). Moreover, ***El-Gilany & Badawy's (2013)*** mean (3.5 ±1.6).

Despite the lack of a statistically significant correlation between breastfeeding and marital status, all mothers with high BPI scores were married, in contrast to the countergroup, which included 1.3% of single mothers. One possible explanation is that mothers who live with their husbands receive

assistance from them, which decreases their workload and give more time for breastfeeding. But according to research conducted in Mansoura by ***El-Gilany & Badawy (2013)*** and in several regions of Ethiopia by ***Gessese et al. (2022),*** single mothers nurse their children more effectively than married mothers, and married mothers make enough money to purchase formula milk.

Results of the current study revealed that mothers over the age of 34 had insignificantly higher BPI scores than low and medium mothers. This could be because mothers tend to become more educated as they age; roughly 63.3% of mothers with high scores had a secondary education or higher, compared to 70.2% of mothers in the poor group. In addition, it was discovered that maternal education level was positively associated with exclusive breastfeeding practice. ***Gessese et al.*** study from Ethiopia in ***2022*** confirmed the positive correlation between breastfeeding and education, which is consistent with our findings. Furthermore, ***Tollah et al. (2020)*** in Cairo, Egypt discovered that approximately two thirds of those with an average age of 26 had a university degree.

The results of the current study demonstrated that the low/medium poor score (89.4%) was much higher in infants of housewives than it was in infants of working mothers (10.6%) when compared to the high score (73.5% vs. 26.5%). In addition, compared to working mothers, housewife mothers had a roughly three-fold increased risk of having a poor BPI score. The findings are corroborated by ***Anstey et al. (2017),*** who noted that working mothers may occasionally be a sign of high-income parents. This could occur because women with higher educational backgrounds may hold income-generating jobs and have the resources to seek breastfeeding advice.

The current study demonstrated that older infants had a lower likelihood of receiving just breast milk. Compared to mothers of infants under 4 months old, mothers of infants more than 4 months old were almost twice as likely to have a poor BPI score. Comparable results were found in Hawassa by ***Adugna et al. (2017),*** Dubti Town ***(Liben & Yesuf, 2016),*** and Cameroon ***(Fombong et al., 2016).*** As infants grew older, their mothers were less likely to nurse them, which could be explained by the possibility that mothers thought their babies were ready for supplementary foods ***(Hussien et al., 2018).*** Therefore, longer nursing leads to a higher risk of maternal breastfeeding issues such mastitis or nipple fissures.

Women who gave birth at a hospital had a higher chance of having a high BPI score than those who delivered at home. Similarly, in Mansoura (***El-Gilany & Badawy, 2013)*** and in Ethiopia ***(Hussien et al., 2018).*** This could be because home delivery creates an environment where mothers are more likely to be influenced by their families and communities to engage in improper newborn feeding practices ***(Legesse et al., 2015)***. However, an Indonesian epidemiological study discovered no link between the place of delivery and the practice of exclusive breastfeeding (EBF) ***(Sugiyanto et al., 2019).***

During two weeks before the study, infants with lower BPI were considerably more likely to have experienced fever (47.2%), cough (79.2%), and diarrhea (24.5%) than those in the highest or medium group. Comparably, a study carried out in Timor-Leste, Ethiopia by ***Senarath et al. (2007)*** revealed that the low BPI group had a higher 2-week period prevalence of diarrhea than both the medium and the high BPI group.

Furthermore, our results corroborated the findings of ***Haile and Biadgilign (2015)*** in Ethiopia, who found that BPI was likewise connected to fewer fever symptoms in the two weeks prior to the survey. There was a 73% increased risk of fever during the previous two weeks for those in the lowest BPI category. Furthermore, a pooled relative risk estimate from 23 research, as reported by ***Ogbo et al. (2018)*** in Tanzania, indicated that breastfeeding lowers the risk of diarrhea and

hospitalization for respiratory infections in infants ≤ 6 months by 57%.

CONCLUSION

The relationship between breastfeeding and the consequences of newborn morbidity can be demonstrated with the use of the Breastfeeding Performance Index (BPI). It is possible to identify vulnerable groups that could be the focus of programs promoting breastfeeding by using the Breastfeeding Performance Index (BPI).

Recommendations

1- Redirecting the government focus towards health services, education and socio-economic factors result in better breastfeeding practices.
2- Health workers implement WHO recommendations of 10 steps for successful breastfeeding and follow up.
3- Increase the awareness to mothers in health facilities during antenatal care (ANC) and postnatal care (PNC) impacts all steps of infant feeding, knowledge, attitude, and skills necessary to promote breastfeeding and complementary feeding practices

Limitations of the study:

Refusal of the mothers for the study , mothers sometimes have difficulty to remember details as the time they starting breastfeeding and small number size.

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