Prenatal Counseling to Overcome Common Maternal and Infant Obstacles Interfering Exclusive Breastfeeding among Rural Primigravida

Magda Fawzy Hasab Allah [(1)], Sanaa Mahmoud Ahmed [(2)], Safaa Ali Abdelnaem [(3)], Amany Hassan Abd Elrahim [(4)]

(1, 3, 4) Lecturer of Woman Health and Obstetric Health Nursing, Minia University, Egypt
(2) Assistant Professor of Pediatric Nursing, Minia University, Egypt

Abstract

Breastfeeding is the primary basic right of infant. Exclusive breastfeeding (EBF) is feeding infant by breast milk alone, without any other ingredient for feeding the children. **Aim of the study:** to evaluate the effect of prenatal counseling to overcome common maternal and infant obstacles interfering exclusive breastfeeding among rural primigravida. **Subjects and methods:** Quasi-experimental research design (pre and post-test) was used to achieve the aim of the study. **Setting:** This study was conducted at prenatal outpatient clinics in Minia university hospitals for obstetric and pediatrics (MUHOP). **Sample type**: A purposive sample type was utilized, 50 antepartum women who fulfilled the inclusion criteria. **Tools:** Two tools were utilized in the current study for data collection: Tool (1): Structured interviewing questionnaire includes demographic characteristics of women (pretest) and Tool (2): Knowledge assessment About EBF (pre/posttest). **Results:** Primigravida had poor knowledge regarding EBF, knowledge about how to overcome common maternal and infant obstacles interfering with EBF (64.0%, 78.0%, 84.0%) before prenatal counseling which decreased to (12.0%, 14.0%, 16.0%) respectively after prenatal counseling with highly statistically significant differences. **Conclusion:** Prenatal counseling was effective in improving women's knowledge about EBF, knowledge about how to overcome the common maternal and infant obstacles interfering with EBF. **Recommendations:** Providing counseling for working mothers regarding how to overcome barriers of EBF as their occupation may be interfering with exclusive breastfeeding.

Keywords: Exclusive Breast Feeding (EBF), Maternal and Infant Obstacles, Prenatal Counseling, Primigravida.

Introduction

The primary basic right of the child is breastfeeding. Initiation of breastfeeding and the timely introduction of adequate, safe, and appropriate complementary foods in conjunction with continued breastfeeding are the primary needs for the growth, development, health and nutrition of infants and children everywhere (**Islam et al**., **2017)**.

Mothers were recommended by WHO to breastfeed their infants exclusively in the first 6 months of their life **(WHO, 2017)**. According to WHO definition, feeding infant by breast milk alone, without any other ingredient for feeding (even water) is called exclusive breastfeeding, excluding any medically necessary vitamins or mineral supplements and drugs (**WHO, 2019).**

Breast feeding is a natural process with multi beneficial effects for mothers and infants **(Carvalho and Boccolini, 2016).** The advantages of breastfeeding are intensified when it is practiced well. Thus, it should be initiated on the right time, i.e., within the first hour after delivery **(Tilahun et al., 2016).** All nutrients needed by the child in the initial six months of life were found in the mother's milk (**Tariku et al., 2017**) and **(Still et al., 2017)**.

One of the most effective approaches for decreasing infant morbidity and mortality in resource limited settings (i.e. human and infrastructural constraints) is the promotion of exclusive breastfeeding (EBF) among the first six months of the infant's life. Studies had reported the important role of EBF among infants for growth, immunity and disease prevention **(Mogre et al., 2016).**

Both the mother and the infant were benefited from breastfeeding. Regarding mother benefits, EBF enhancing birth spacing and decreases the risk of breast and ovarian

cancer (**Victora et al., 2016**). Also, mothers significantly have both short- and long-term benefits from breastfeeding. As breastfeeding stimulated oxytocin secretion which greatly facilitates the recovery of the uterus after childbirth. In addition, breastfeeding could strengthen mother–infant attachment, and reduces the risk of child abuse and neglection **(Al‑Katufi, et al., 2020).**

Regarding infant benefits, EBF could avoid diseases such as diarrhea and pneumonia which are the main causes for infant morbidity and mortality (**Shakya et al., 2017**). About 12% of infant under-5 years mortality rate was attributed to the suboptimal breastfeeding including a lack of EBF. Therefore, breastfeeding plays a vital role in attainment of target 3.2 of the Sustainable Development Goal (SDG) that aimed at decreasing neonatal deaths to at least as low as 12 per 1000 live births by 2030 (**UNICEF, 2019**). Thereby improving opportunities of survival among children from birth until the age of 2 years old.

Risk of gastroenteritis, diarrheal illnesses, urinary tract infections (UTIs), sepsis, and respiratory infections among infants that are fed by breast milk is lower if compared with infants who are fed by a formula (**Kramer and Kakuma R. , 2012)**

Breastfeeding is aiming to enhancement of infants' survival and to get the major health benefits for both the infants and their mothers **(Shamir, 2016 and Mosca, et al, 2017).** Consequently, it is considered a public health issue to promote and support breastfeeding initiation, duration, and exclusivity. However, worldwide rates of breastfeeding are lower than international recommendations, especially among the high-income countries. Therefore, there is a necessity to increase the awareness of primigravida women about the key factors associated with early cessation of breastfeeding and for gaining further insight into the related modifiable risk factors **(Sayres and Visentin., 2018).**

Many women at early postpartum period experience challenges with problem-solving and developing effective techniques to increase breastfeeding duration and developing efficient breastfeeding patterns after hospital discharge**.** Support and education presented formally or through interactional techniques, rather than pamphlets, often lead the best outcomes **(Bouknight-Gant, 2018).**

Common problems related to breastfeeding include breast engorgement, painful nipple, nipple infection, mastitis, breast abscess, poor milk production and incorrect techniques, infrequent feeding, breastfeeding on scheduled times and extra food from outside are important risk factors that could predispose to lactation problem. Adequate management of these conditions is very important and if not treated, could lead to early weaning or improper feeding. So, early detection and adequate management of lactational problems and improving awareness about importance of breastfeeding could be reflected positively on the mothers & babies health **(Haider et al., 2014)**

Breastfeeding difficulties and maternal perception about the insufficient amount of breast milk can affect and directly leads to early cessation of breastfeeding. Lack of confidence in breastfeeding abilities, maternal depression, and early return to work may also contribute to early termination of breastfeeding **(Al‑Katufi, et al., 2020).**

Infant difficulties include suckling problems, easy fatigability among infant, spending long time for each feeding, refusing BF by the infant, improper issues, or difficulties during breast feeding. Also, considerations should be given to the newborn or mother with unsatisfactory medical condition and/or infant weight (**Chang et al., 2019**).

The prenatal period affords a chance for providing pregnant women, their partners and families with information about breastfeeding benefits at a time when many decisions about infant feeding are being contemplated. **(Willumsen, 2013).** Lactational counseling during antenatal time is the process of counseling women during pregnancy regarding the importance of exclusive breastfeeding and its immediate initiation. Information about breastfeeding should be received during pregnancy period to influence the primary breastfeeding preparations, aiming to prolonged breastfeeding outcome along with

persistent postnatal counseling **(Thomas, et al, 2018).**

Improving awareness about the modifiable obstacles faced by mothers and their infants during breastfeeding may help health professionals in detecting mothers at risk for early breastfeeding termination and implementing targeted breastfeeding support. (**McFadden et al, 2017), (Heidari et al, 2017).**

Significance of the study

Globally, only solely forty two percent of newborns are breastfed within the first hour of birth, and only 2 from 5 infants less than 6 months of age are exclusively breastfed. The data show that less than three quarters of the children aged between 12-15 months old are still breastfeeding. (**UNICEF, 2018**)

Among the human factors, the experience of breastfeeding obstacles greatly contributes to early breastfeeding cessation and causes mothers to be less likely to breastfeed a future child **(Palmér, 2019).** However, "breastfeeding obstacles" includes a broad area of various biological, psychological, and social factors (**Brown, et al, 2016).**

In spite of best efforts by various organizations at government and NGOs levels, the counselling for breast feeding during ante natal period is almost an unaddressed (**Tiwari et al. 2018).** Lack of support and lack of knowledge base among new mothers concerning appropriate breastfeeding practices, maternal and infant obstacles interfering exclusive breast feeding can affect the breastfeeding initiation and duration rates.

From clinical experience the present study conducted among women from rural areas because rural areas have a lack of prenatal sessions and care in their maternal and child health centers, also housewives as the first source of information are family members such as mother or sister that makes hereditary misconceptions are the main obstacle for continuing BF.

Aim of the Study

To evaluate the effect of prenatal counseling to overcome common maternal and infant obstacles interfering exclusive breastfeeding among rural primigravida.

Research Hypothesis

Providing prenatal counseling for primigravida women will improve their knowledge about EBF and how to overcome common maternal and infant obstacles that interfering exclusive breastfeeding.

Subjects and Methods

Study design: Quasi-experimental research design (pre and post-test) was utilized to achieve the study's aim.

Setting: The current study was conducted at prenatal outpatient clinics in Minia university hospitals for obstetric and pediatrics (MUHOP).

Sample type: A purposive sample was utilized in the current study. Antepartum women who fulfilled the following criteria: (Primigravida, age 18-45 years old, within the third trimester near labor, from rural areas, housewife and willing to participate).

Sample size: According to Minia University Hospital for Obstetrics and Pediatrics (MUHOP) census, the yearly average of delivery was 1000. Sample size determined using Epi info 7 program; the calculation was based on the following: Population size= 1000**,** Acceptance Error = 5%**,** Confidence coefficient= 95%**,** Response distribution = 90% So 50 women were recruited.

Study Tools:

Two tools were utilized in the current study for data collection:

1. **Tool (1): Structured interviewing questionnaire (pretest)**

It developed by the researchers after extensive reviewing of the related literature. It included demographic characteristics: such as (age and educational level, receiving previously antenatal counselling about EBF and what source of information).

2. **Tool (2): Knowledge assessment tool (pre/post):**

It is an interviewing developed by the researchers to assess women's knowledge regarding exclusive breast feeding (EBF) including **three parts**:

Part (I): It included (15) questions about exclusive breast feeding (definition, importance of EBF to mothers and to baby, the best time to initiate breastfeeding after delivery, times to breast feeding day and night, duration of exclusive breast feeding,.etc.).

Scoring System: Each correct answer was given a score of one and wrong answer was given zero. The total marks will be summed; the percentage will be calculated for all participants and judged as the following: poor (<50%) or (<7 scores), Fair (50%-70%) or (7-11 scores), good (>70%) or (>11 scores).

Part (II): it included (20) questions related to knowledge about the common maternal obstacles interfering with EBF and how to overcome/or managed it such as (scanty milk and, breast engorgement, nipple soreness, delayed milk secretion and inverted nipple,..etc.).

Scoring System: Each correct answer was given a score of one and wrong answer was given zero. The total marks will be summed; the percentage will be calculated for all participants and judged as the following: poor (<50%) or (<10 scores), Fair (50%-70%) or (10-14 scores), good (> 70%) or (>14 scores).

Part (III): it included (8) questions related to knowledge about common Infant obstacles interfering with EBF and how to overcome/or managed it such as (poor suckling , sleepy baby, admission to NICU,etc.)

Scoring System: Each correct answer was given a score of one and wrong answer was given zero. The total marks will be summed; the percentage will be calculated for all participants and judged as the following: poor (<50%) or (<4 scores), Fair (50%-70%) or (4-6 scores), good (>70%) or (>6 scores).

The Preparatory Phase:

An official permission was obtained from the Hospital as well as oral informed consent from women who met the inclusion criteria.

Tools Validity and Reliability

Validity: The sheet was provided by five-panel experts from Women Health and Obstetrics Nursing and Pediatric Nursing Department's expertise who revised the tools for accuracy, eligibility, inclusiveness, feasibility, applicability, and simplicity

Reliability: The test was assessed by using the Cronbach's alpha coefficient, it was (0.957, 0.981, and 0.962) for Knowledge about exclusive breast feeding, knowledge about how to overcome common maternal, and infant obstacles interfering with EBF respectively, hence the sheets were found to be highly reliable.

Ethical Consideration:

An official approval was obtained from authorities' personnel from the hospital. Researchers introduced themselves to women who met the inclusion criteria and the aim of this study was explain to them in order to gain their acceptance to participate in the study voluntary and attain their oral consent. It was ensured that, the study had no risk or hazards on their health. Each participant had the right to withdrawal from the study at any time and all data that obtained were considered confidential.

Pilot study:

The tools of data collection were pretested on a random sample of 10% (5 women) selected from the same setting of the study to check the clearness, pertinency, any problems with their application, and the needed time to complete the tools. According to the pilot study results modifications of the tools was done. Women who participate in the pilot study were omitted from the total sample.

Procedure:

The study was conducted through three phases: Interviewing and assessment, implementation, and evaluation. The data was collected between the beginnings of June 2019 to the end of February 2020 (9 months).

1. Interviewing and assessment phase:

- Interview women who met criteria after took their oral acceptance for participation. The researchers conducting the first

meeting in the outpatient prenatal clinic with women and briefly explain the essence and the intent of the study. The interview took around 15-20 minutes for each.

- After getting the women agreement to share in the present research, the researchers explained to each woman an overview and illustration about the evaluation tools issues. Therefore, an interviewing sheet was used to evaluate data related to the woman demographic characteristics as age, level of education, and knowledge assessment tool. It took about 15-20 mins for each woman to complete the questionnaire sheet. Around 3 to 4 women were organized daily by the researchers. At the end of the pretest, an agreement was made with each woman on a suitable date for the implementation of the educational sessions, and ten women who correspond at the same date were assembled (5 groups of women were arranged)**.**

2- Implementation phase:

- Implementation occurred in two educational sessions for theoretical and practical information about exclusive breast feeding were provided to the group of women based on their agreement on a suitable date for them, (30- 35) min for each session. At the starting, the women were informed about the educational sessions' subjects. In the 1st session, definition of exclusive breast feeding, importance of exclusive breast feeding to mothers and baby, the best time to initiate breastfeeding after delivery, times to breast feeding day and night, duration of exclusive breast feeding EBF were discussed. The 2nd session concerned with a discussion of breast-feeding technique, maternal and infant obstacles interfering with EBF such as (scanty milk, Breast engorgement, nipple soreness, delayed milk secretion, inverted nipple, poor suckling and how to improve it, sleepy baby and how to wake him…etc.) and management of each problem.

- Health education was provided to the women as a symposium and group discussion by using instructional material on health education at a separate room in the hospital; it emphasized on improving women's knowledge about exclusive breast feeding. At the finishing of the symposium, feedback from the women about the topic was obtained to ensure that the ultimate benefits for women were get.

- Handbook covering information about exclusive breast feeding was given to women at the end of the sessions to achieve its objectives. It consists of significant information about exclusive breast feeding (definition of exclusive breast feeding, importance of EBF to mothers and baby, the best time to initiate breastfeeding after delivery, times to breast feeding day and night, duration of EBF, technique of BF maternal and infant obstacles interfering with EBF such as (scanty milk, Breast engorgement, nipple soreness, delayed milk secretion, inverted nipple, poor suckling and how to improve it, sleepy baby and how to wake him…etc.) and management of each problem. Also, the researchers contacted women through phone call for follow up and support.

3. Evaluation phase:

- Evaluation phase were conducted after 6 months post-partum to ensure that the women overcome any obstacles facing her during EBF period and to detect her commitment to educational intervention instructions. The researchers ensure that the women follow the educational instruction about exclusive breast feeding 6 months after delivery for each participant individually to insure effectiveness of educational program.

- The influence of the educational sessions on improving knowledge was achieved through comparison between a pre- and post-test that was conducted 9 months of intervention to determine their knowledge level.

Statistical analysis

- The collected data were organized, categorized, and analyzed using the statistical package for the social sciences (SPSS), Released 2013, IBM SPSS

Statistics for Windows, and Version 22.0. Armonk, NY: IBM Corp. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and mean and SDs for quantitative variables. The statistical tests used were paired t test, $\chi 2$ test, and r test. Statistical significance was considered as significant when P value less than or equal to 0.05 and highly significant when P value less than or equal to 0.001, and no statistically significant difference was considered when P value was more than 0.05

Results

Figure (1): Presented that 70.0% of the studied women aged between 20 – 30 years old with mean age 24.15 ±4.626

Figure (2): showed that 40 % of the studied women had basic level of education.

Figure (3): it illustrated that 78% of the studied women hadn't any previous antenatal counselling about EBF.

Figure (4). It revealed that 54 % of the studied sample gets their information from family and friends while only 26 % gets their information from the health care providers.

Table (1): showed that there was significant increase in all items of primigravida mothers' knowledge regarding breast feeding after the educational intervention with highly statistically significant improvement in each parameter of their knowledge (where p-value = 0.001 in each one)

Table (2): showed frequency distribution of participant's responses about maternal obstacles interfering with EBF, it presents that the most maternal obstacles interfering with EBF were lack of experience, interference from relative to give water or herbs followed by Lack of knowledge/assistance from hospital staff when asked with breastfeeding, breast problems (72%, 66%, 64% and 34%) respectively.

Table (3): illustrates that there was significant increase in all items of primigravida mothers' knowledge about how to overcome common maternal obstacles interfering with EBF after the educational intervention with highly statistically significant improvement in each parameter of their knowledge (where p-value = 0.001 in each one).

Table (4): showed that the most infant's obstacles interfering with EBF were refusal or poor suckling, mother use herbal drinks to relieve colic, followed by sleepy baby (46%, 28%, and 26%) respectively.

Table (5): presents that there was significant increase in all items of primigravida mothers' knowledge about how to overcome common infants' obstacles interfering with EBF after the educational intervention with highly statistically significant improvement in each parameter of their knowledge (where p-value = 0.001 in each one)

Table (6): showed that 64 % of the studied primigravida women had poor exclusive breast feeding knowledge before prenatal counseling decreased to 12% after prenatal counseling, while 78% of them had poor knowledge about how to overcome common maternal obstacles interfering with EBF prenatal counseling decreased to 14% after prenatal counseling, and finally 84% of them had poor knowledge about how to overcome common Infant obstacles interfering with EBF prenatal counseling decreased to 16% after prenatal counseling with highly statistically significant differences which *P*-value < 0.001.

Table (7): there were highly statistical significance between age and educational level of primigravida women with their knowledge about exclusive breast feeding before prenatal counseling.

Table (8): showed that 84% of primigravida women practicing exclusive breast feeding

Table (9): showed that the most common reasons were the psychological factors followed by insufficient breast milk and low birth weight of the baby (75%, 62.5% and 37.5%) respectively.

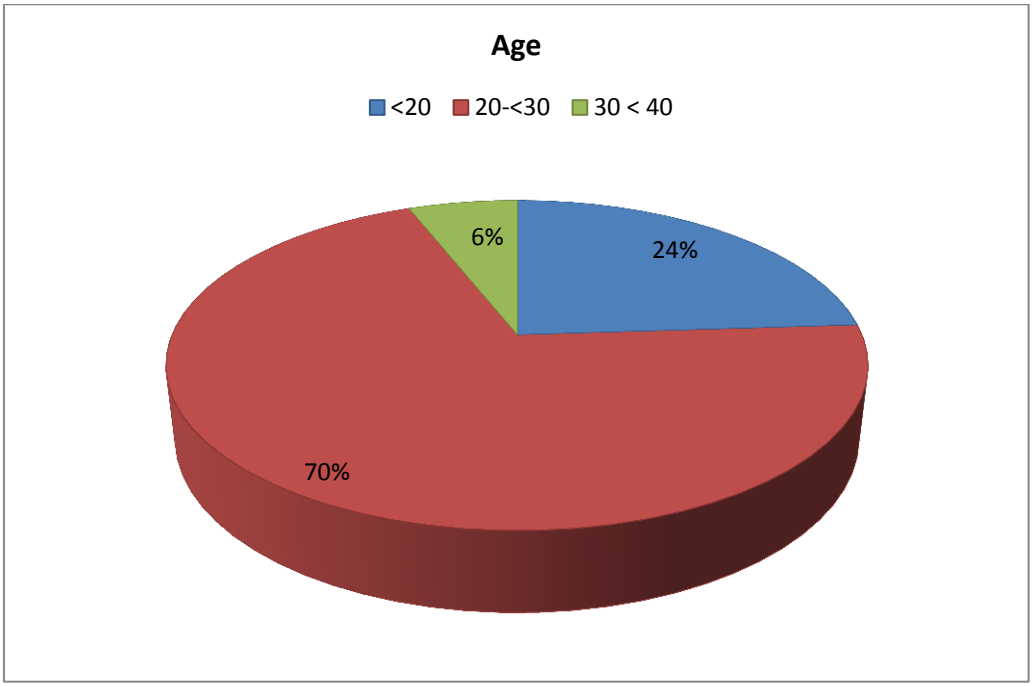

Figure (1): Age distribution among the studied primigravida women (n= 50).

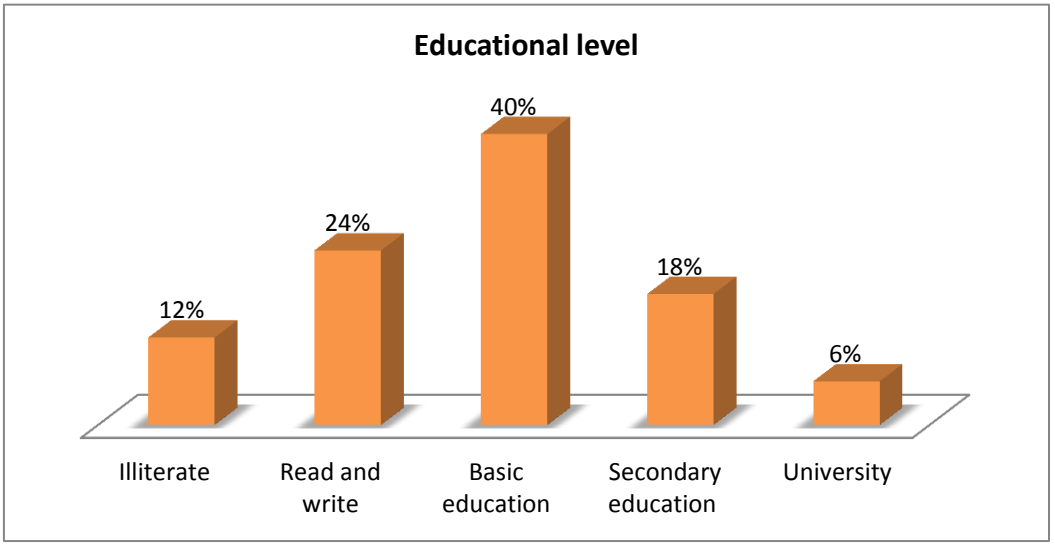

Figure (2): Distribution of educational level among the studied primigravida women (n= 50).

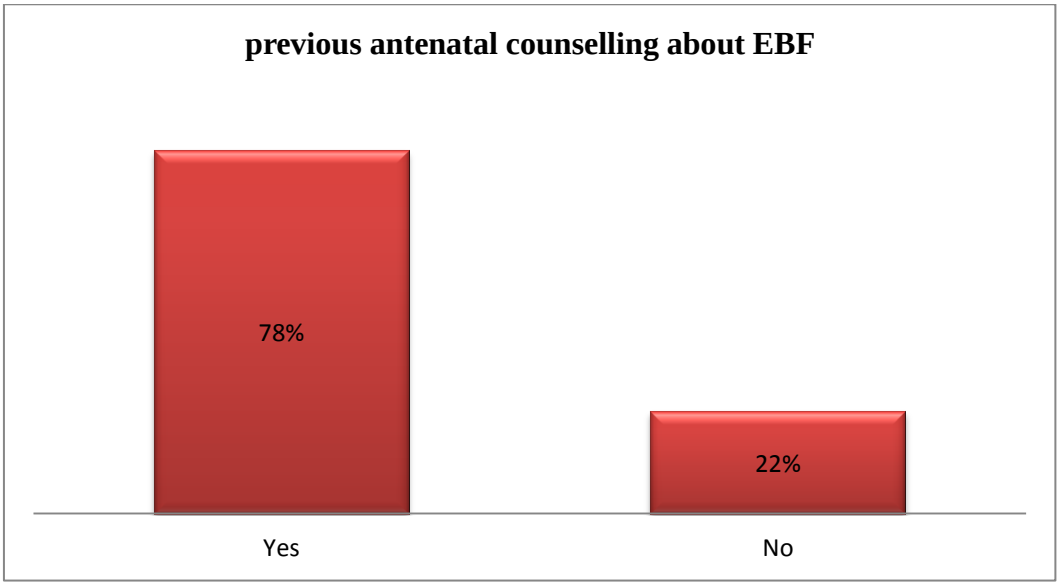

Figure (3): distribution of primigravida women according to their previous antenatal counselling about EBF (n= 50).

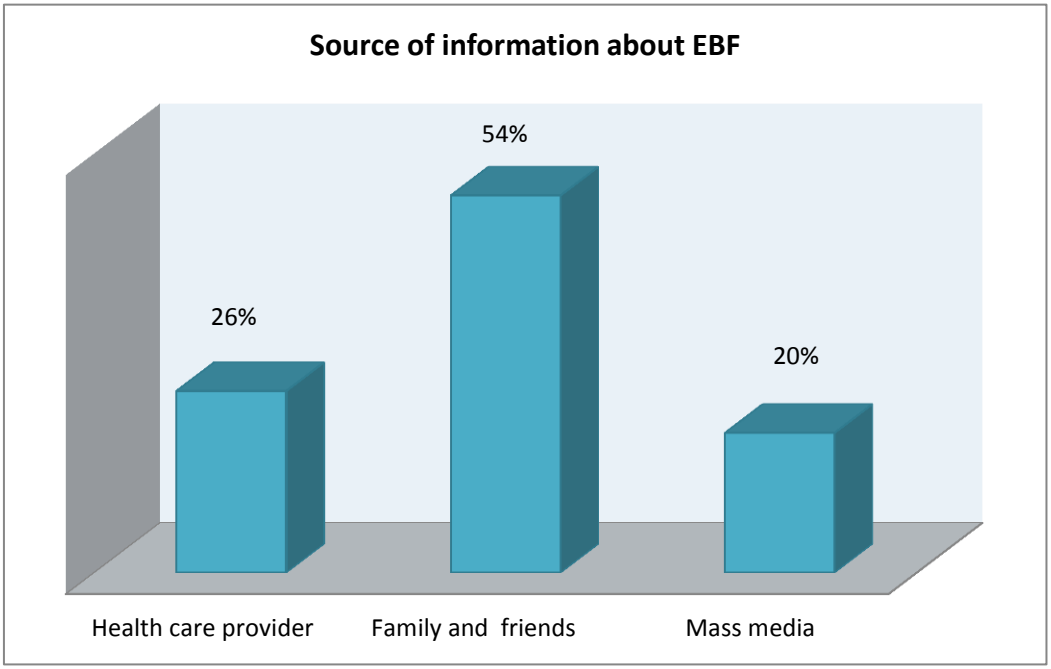

Figure (4): Distribution of primigravida women according to their source of information about EBF (n= 50).

Table (1): Primigravida mothers' knowledge regarding exclusive breast feeding (n = 50).

Items	Before				After				T	P
	Incorrect answer		Correct answer		Incorrect answer		Correct answer			
	N	%	N	%	N	%	N	%		
1. Definition of exclusive breast feeding	48	92	2	8	11	22	39	78	11.809	.001**
2. Importance of breast feeding to mothers	43	86	7	14	6	12	44	88	11.809	.001**
3. Importance of breastfeeding to the baby	42	84	8	16	9	18	41	82	9.753	.001**
4. The best time to initiate breastfeeding after delivery	46	92	4	8	2	4	48	96	18.956	.001**
5. The Ideal duration of exclusive breast feeding	31	62	19	38	12	24	38	76	5.480	.001**
6. Ideal frequency of breast feeding/day	24	48	26	52	7	14	43	86	5.024	.001**
7. The duration of breast feeding in one time	20	40	30	60	5	10	45	90	4.582	.001**
8. Maternal position for breastfeeding	28	56	22	44	8	16	42	84	5.715	.001**
9. Pattern of BF	23	46	27	54	9	18	41	82	4.365	.001**
10. In EBF giving a baby Artificial Formula in 11. her/his first six months	32	64	18	36	5	10	45	90	7.585	.001**
12. In EBF giving baby fluids in her/his first six months	43	86	7	14	3	4	47	96	14.000	.001**
13. Factors that increase breasts milk production	27	54	23	46	9	18	41	82	5.250	.001**
14. Factors that inhibit breasts milk production	35	70	15	30	6	12	44	88	8.226	.001**
15. Indicators of adequacy of breast feeding	38	76	12	24	5	10	45	90	9.753	.001**
16. Component of breast feeding	39	78	11	22	10	20	40	80	8.226	.001**

Test used: paired sample T test. **Highly statistically significant at P value less than or equal to 0.01

Table (2): Frequency distribution of participants responses about maternal obstacles interfering with EBF (n = 50).

# Mothers' obstacles interfering with EBF	No.	%
1. Lack of experience	36	72
2. Mother felt that breast milk was inadequate/insufficient	12	24
3. Mother think that baby won't get enough nutrition	7	14
4. Believing that formula fed babies growing better than breastfed babies	9	18
5. Lack of partner/family and social support	28	56
6. Mothers Unaware of EBF importance/benefits	30	60
7. Lack of knowledge/assistance from hospital staff when asked with breastfeeding	32	64
8. Stressful situation (pain-anxiety)	19	38
9. Cannot breast feed in public places/ Embarrassment	16	32
10. Mode of delivery (C.S or episiotomy)	10	20
11. Artificial feeding is easier	9	18
12. Beliefs about the effects of complementary food on the growing baby/ Early introduction of complementary foods	29	58
13. Misguided information on early breastfeeding from relatives and friends	30	60
14. Interference from relative to give water or herbs	33	66
15. Pregnancy forces mothers to stop breastfeeding	18	36
16. Presence of mother illness that prevents breastfeeding	2	4
17. Breast and nipple problems	17	34
18. Others as (personal decision, did not desire to breastfeed, Fear of breast redundancy)	5	10

More than one answer

Table (3): Primigravida mothers' knowledge about how to overcome common maternal obstacles interfering with EBF (n = 50).

Items	Before				After				T	P
	Incorrect answer		Correct answer		Incorrect answer		Correct answer			
	N	%	N	%	N	%	N	%		
1. If the baby didn't feed colostrum from the breast, you should:	36	72	14	28	9	18	41	82	7.584	.001**
2. Causes of delayed milk secretion	43	86	7	14	4	8	46	92	13.181	.001**
3. Managements of delayed milk secretion postpartum	45	90	5	10	13	26	37	74	11.225	.001**
4. The mother determines the breast milk is not sufficient (scanty) by	40	80	10	20	7	14	43	86	9.753	.001**
5. The management of scanty milk (A Low Breast Milk Supply)	39	78	11	22	4	8	46	92	10.693	.001**
6. definition of breast engorgement	35	70	15	30	2	4	48	96	9.753	.001**
7. The management of breast engorgement	37	74	13	26	5	10	45	90	9.333	.001**
8. Definition of breast mastitis	38	76	12	24	11	22	39	78	7.584	.001**
9. The management of breast mastitis	39	78	11	22	13	26	37	74	7.286	.001**
10. Definition of breast abscess	33	66	17	34	10	20	40	80	6.461	.001**
11. The management of breast abscess	37	74	13	26	15	30	35	70	6.205	.001**
12. Definition of breast mass	40	80	10	20	14	28	36	72	7.286	.001**
13. The management of breast mass	42	84	8	16	17	34	33	66	7.000	.001**
14. The management of big breast/nipple	46	92	4	8	16	28	34	68	8.573	.001**
15. The causes of nipple soreness and laceration	36	72	14	28	6	12	44	88	8.573	.001**
16.The management of nipple soreness	42	84	8	16	12	24	38	76	8.573	.001**
17. Definition of Inverted nipple.	46	92	4	8	10	20	40	80	10.232	.001**
18. Management of inverted nipple.	47	94	3	6	11	22	39	78	11.225	.001**
19. Management of nipple size problems (Big, or small)	36	72	14	28	9	18	41	82	7.584	.001**
20. Stress management	45	90	5	10	11	22	39	78	10.204	.001**

Test used: paired sample T test. **Highly statistically significant at P value less than or equal to 0.01

Table (4): Frequency distribution of participants responses about infant's obstacles interfering with EBF (n = 50).

# infant's obstacles interfering with EBF	No.	%
1. Sleepy baby	13	26
2. Refusal or poor suckling	23	46
3. Too demanding, not satisfied hungry infant	11	22
4. Weight gain is not satisfactory	8	16
5. Infant had oral problems as Oral candidiasis	3	6
6. Congenital abnormities as tongue tie, cleft lip, and cleft palate	1	2
7. Mother use herbal drinks to relieve colic	19	28
8. Infant is angry or rejecting feeding	10	20
9. Pediatrician has prescribed artificial milk or other supplements	9	18
10. Admission to NICU	2	4
11. Presence of infant illness that prevents breastfeeding	4	8

More than one answer

Table (5): Primigravida mothers' knowledge about how to overcome common infants' obstacles interfering with EBF (n = 50).

Items	Before				After				T	P
	Incorrect answer		Correct answer		Incorrect answer		Correct answer			
	N	%	N	%	N	%	N	%		
1. Causes of sleepy baby.	40	80	10	20	4	8	46	92	11.225	.001**
2. How to wake the Baby?	45	90	5	10	11	22	39	78	10.204	.001**
3. Causes of poor suckling.	38	76	12	24	9	18	41	82	8.226	.001**
4. How to improve the baby's suckling?	44	88	6	12	13	26	37	74	8.941	.001**
5. Management of infant oral problems (fungal infection).	42	84	8	16	12	24	38	76	8.573	.001**
6. How to deal with angry Infant or who rejecting feeding?	46	92	4	8	15	30	35	70	8.941	.001**
7. How the mother mange when baby admitted to the NICU?	44	88	6	12	10	20	40	80	10.204	.001**
8. How to deal in case of baby who has congenital abnormalities (Tongue tie, Cleft lip and cleft palate)?	41	82	9	18	14	28	36	72	7.584	.001**

Test used: paired sample T test. **Highly statistically significant at P value less than or equal to 0.01.

Table (6): Primigravida mothers' total knowledge regarding exclusive breast feeding, and how to overcome common maternal and infant obstacles interfering with EBF before and after prenatal counseling (n= 50).

ITEMS	Before		After		T	P- Value
	No.	%	No.	%		
Exclusive breast feeding knowledge						
o Poor < 50.0% (<7 scores)	32	64	6	12	10.186	0.001**
o Fair 50.0- 70.0% (7-11 scores)	11	22	3	6		
o Good > 70.0% (>11 scores)	7	14	41	82		
Mean ± SD	4.62± 5.119		12.86± 4.558			
Primigravida mothers' knowledge about common maternal obstacles interfering with EBF and how to overcome						
o Poor < 50.0% (<10 scores)	39	78	7	14	10.450	0.001**
o Fair 50.0- 70.0% (10-14 scores)	5	10	6	12		
o Good > 70.0% (>14 scores)	6	12	37	74		
Mean ± SD	3.96 ± 6.767		16.02 ± 6.778			
Primigravida mothers' knowledge about common Infant obstacles interfering with EBF and how to overcome.						
o Poor < 50.0%(<4 scores)	42	84	8	16	10.651	0.001**
o Fair 50.0- 70.0%(4-6 scores)	3	6	6	12		
o Good > 70.0%(>6 scores)	5	10	36	72		
Mean ± SD	1.20±2.539		6.24±2.987			

Test used: paired sample T test. **Highly statistically significant at P value less than or equal to 0.01.

Table (7): Relation between demographic characteristics of the studied primigravida women and their total exclusive breast-feeding knowledge levels before prenatal counseling (n= 50).

Demographic characteristics	Exclusive breast-feeding knowledge					
	Before					
	Poor (n= 32)		Fair (n = 11)		Good (n=7)	
	No	%	No	%	No	%
Age/ years						
o <20 (n=12)	3	6.0	5	10.0	4	8.0
o 20-30 (n=35)	29	58.0	6	12.0	0	0.0
o 30 - < 40 (n=3)	0	0.0	0	0.0	3	6.0
Fisher (*P*-value)	33.814 (0.001) **					
Educational level						
o Illiterate(n=6)	6	12.0	0	0.0	0	0.0
o Read and write (n=12)	12	24.0	0	0.0	0	0.0
o Basic (n=20)	14	28.0	6	12.0	0	0.0
o Secondary(n=9)	0	0.0	5	10.0	4	8.0
o University(n=3)	0	0.0	0	0.0	3	6.0
Fisher (*P*-value)	48.373 (0.001) **					

Fisher test for qualitative data less than 5 cases

* Statistically significant at P value less than or equal to 0.05

**Highly statistically significant at P value less than or equal to 0.01.

Table (8): Frequency distribution of women according to feeding practices

Feeding practice method	N (50)	%
Exclusive breast feeding	42	84%
Artificial feeding	5	10%
Mixed feeding	3	6%

Table (9): Reasons for discontinuing exclusive breast feeding practice according to mother's responses at the end of 6 months period

≠Reason	N (8)	16%
Psychological factors	6	75.0%
Insufficient breast milk	5	62.5%
having a baby of low birthweight	3	37.5%
Infant death	2	25.0%
Caesarean section	2	25.0%
Nipple problems	1	12.5%
Breast problems	1	12.5%

≠ More than one answers

Discussion:

Breast-feeding is the most effective approach to protect mother and infant health; promote healthy growth, and ideal improvement in early childhood **(Ameen & Sarwer, 2018).** Education with counseling is methods that place mothers as subjects not objects, as an interest participating in counseling. So, the aim of this study was to evaluate the effect of prenatal counseling to overcome common maternal and infant obstacles interfering exclusive breastfeeding among rural primigravida.

Regarding age, near three quarter of the participants' was between 20–<30 years old, with a mean 24.15±4.626 years, this agreed with **(Thakur et al., 2018)** who reported that the average age of study sample were 25.9+4.44 years, also come in accordance with **(Degefa et al., 2019) and (Mundagowa et al., 2019)**, who reported that near three quarter of the participants' age was between 20<30 years old. Also this came in contact with the study of (**Hasan et al., 2016)** who found that mean age among studied group was 23.25 ±5.75 yrs.

Regarding educational level the current study showed that near half of the participants had basic level of education and this agreed with (**Emam & Ali 2017) and (Hasan 2016)** who reported that near half of participant had basic educational level only.

The current study finding revealed that more than three quarters of the studied sample hadn't any previous antenatal counseling about EBF, this doesn't match the study finding of **(Mgongo et al., 2014)** who concluded that near three quarters of participants get advice on breastfeeding during ANC attendance, this may be rendered to that our sample were housewives primigravida from rural areas and they lack the importance of ANC visits and this is the first experience for them.

In relation to source of information about EBF, the current study results showed that more than half of the women got their information from family and friends. This met with **(Najem et al., 2011)** who found that the majority of nursing mothers had their information from family and friends.

Regarding the studied primigravida women's knowledge about exclusive breast feeding, there were significant increase in all items of primigravida mothers' knowledge regarding breast feeding after the implementation of the educational intervention with highly statistically significant improvement in each parameter of their knowledge (where p-value = 0.001 in each one). This may be due to lack of primipara mothers' awareness about EBF pre intervention which improved through the prenatal counseling sessions.

This matched with [**Cardoso et al., 2017**] who found that prenatal education is a vital topic to improve BF knowledge, skills and confidence for starting and continuing BF until sixth month old of infant which effects

positively on his health. Mother's knowledge and skills can rise the rate and duration of breastfeeding, which both are a relevant component of effective decisions and actions related to BF [**Chaudhary et al., 2011**].

Also, the current study finding in the same line with **(Tella et al., 2016)** who carried out their research on mothers who have given birth, they found that there was a relation between the provision of education and increased knowledge of mothers about breast-feeding.

This finding agreed with **(World Health Organization 2017)** which recommended prenatal counseling, for early initiation of breast-feeding during the 1st hour after birth, EBF should start during the first six months of baby life, and continued breast-feeding at least until the age of 2 years old. In addition, **(Tiwari et al., 2018)** who mentioned that the effect of counseling for exclusive breast-feeding was statistically much significant which only 18% mothers in the study groups knew that in the prenatal stage increased to 90.8% with highly statistically significant differences post the counseling implementation.

Regarding maternal obstacles interfering with EBF, most of the studied primigravida women had poor knowledge level before the prenatal counseling decreased to the minority after two weeks post-partum with statistically significant differences. This finding is due to a lack of experience about practicing breast feeding, breast engorgement/soreness, perceptions of insufficient milk supply because the woman is primigravida, also due to lack of individualized counseling in the antenatal visits period that result in reduced knowledge before our counseling.

A recent Maternal and Child Survival Program (MCSP)-led systematic review recognized 16 barriers to EBF, including pre lacteal feeding, maternal perceptions of insufficient breastmilk, early introduction of foods and liquids before six months of age, and lack of counseling on physical breast problems **(Buccini et al., 2019).**

This finding is consistent with **(Kavle et al., 2019)**, who concluded that increasing the counseling sessions of women to address obstacles interfering with EBF and increasing community support for exclusive breast-feeding are critical components of infant and young child feeding programming, which will aid in attaining the 2025 World Health Assembly EBF targets. Also, (**Rollins et al., 2016)** showed that numerous reasons contribute to a decline in the rates of EBF as mothers work schedules, family influence, low breast milk production, swollen breasts or sore nipples, access to food items and preparation or giving foods.

Regarding participants responses about infant obstacles interfering EBF, the results of the present study revealed that most infant obstacles were refusal/ poor suckling, use of herbal drinks, and sleepy baby. This partially agreed with (**Kaipparettu 2018)** who found that more than half of the sample mentioned that EBF related problem is the poor suckling. Likewise in a study done by **(Agunbiade et al., 2012)** it was showed that the factor leads to failure of EBF is the mothers perception that their babies remained hungry after breastfeeding. This may be related that primigravida lack of experience about the art of good breastfeeding technique including good latching on. Also, the use of herbal drinks may decrease the desire of the baby to breast feed as it leads to decrease the sense of hunger. Finally sleepy baby and this is a common problem especially in the early postpartum period due to physiological or pathological jaundice that make the baby sleepy all over the day or the night that is considered an infant obstacle.

Also**, (Kavle et al., 2019)** in their study concluded that improper latching, poor positioning; perceptions of insufficient breast milk, and breast engorgement were barriers to EBF. In addition, (**World Health Organization 2015)** points high light on the maternal and neonatal problems that could be overcome if the woman is informed during the antenatal period about the proper technique.

Concerning infant obstacles interfering with EBF, more than half of the primigravida women had poor knowledge before prenatal counseling decreased to none after two weeks post-partum with statistically significant

differences. This finding is due to a lack of confidence in mothers' ability to manage infant latching or suckling problems. Counseling influences mothers' ability to access health services, especially getting correct and accurate information about infant care during breast-feeding.

Regarding the demographic characteristics of the studied primigravida women and their total knowledge about exclusive breast feeding before prenatal counseling, there were statistical significance differences found between primigravida women's age and their educational level about breastfeeding knowledge before prenatal counseling. This result, supported by **(Hassan, et al., 2015)** who showed statistically significant relation with knowledge level regarding breast feeding. Also agreed with a study finding done by **(Steurer, 2017)** who mentioned that the educational level of the mother is associated with better breastfeeding practices in both timely initiation and maintenance. This finding might be due to that old age mothers with higher educational level may be able to understand and value the benefits of exclusive breast milk in their babies and being more motivated to practice it.

Concerning distribution of women regarding feeding practices, it was found that more than four fifths of primigravida women were practicing EBF. This may be rendered to the effectiveness of the educational program in improving mother's knowledge about the importance of EBF.

Regarding reasons of discontinue EBF practice according to mothers' responses; it was found that the most common reasons were psychological factors followed by insufficient milk production and low birth weight. This contradicted with the study done by **(Najem et al., 2011)** who found that lack of BF experience, refusal of suckling, inadequate milk production, pain & anxiety and lack of family encouragement are the most common problems in primipara mothers in postnatal periods that interferes with EBF. This may be due to the new role of motherhood that is more obvious in primigravida women due to extra duties as a result of the new baby that makes them overwhelmed and stressed that increases the chance of discontinuing BF.

Many constraints in this study were identified that leads to termination of EBF among mothers during the first six months of peuriperium. These recognized obstacles will help the doctors, nurses and other healthcare professionals provide adequate education to the primigravida women regarding EBF benefits and managing common maternal problems that may affect on EBF continuation in the early postpartum period.

Conclusion:

The study concluded that the prenatal counseling was effective in improving women's knowledge about exclusive breast feeding, overcoming maternal and infant obstacles interfering with exclusive breast-feeding. So, it supports our Hypothesis "providing prenatal counseling for primigravida women was effective to improve their knowledge about EBF and how to overcome common maternal and infant obstacles that interfering exclusive breastfeeding.

Recommendations:

- Continuous prenatal counseling to refresh and update women's knowledge about exclusive breast feeding, maternal and infant obstacles interfering with exclusive breast-feeding.
- Broad antenatal lactation counseling should be held in hospitals, mothers and child health centers MCH in rural areas and clinics to improve newly mother knowledge about EBF.
- Providing counseling for working mothers regarding how to overcome barriers of EBF as their occupation may be interfering with exclusive breastfeeding.

References

Agunbiade, O. M., & Ogunleye, O. V. (2012). Constraints to exclusive breastfeeding practice among breastfeeding mothers in Southwest Nigeria: implications for scaling up. International breastfeeding journal, 7(1), 1-10.

Al-Katufi, B. A., Al-Shikh, M. H., Al-Hamad, R. F., Al-Hajri, A., & Al-Hejji, A. (2020). Barriers in continuing exclusive breastfeeding among working mothers in primary health care in the ministry of health in Al-Ahsa region, Saudi Arabia. Journal of family medicine and primary care, 9(2), 957.

Ameen, A., & Sarwer, Z. (2018): Effectiveness of Educational Program on Knowledge Regarding Breast-feeding among Primary gravida Mothers. PJNM. 2 (4): 415- 419.

Bouknight-Gant, J. (2018). Effectiveness of Early Postpartum Follow-up on Breastfeeding Attrition. Dr of nursing practice (DNP) translational and clinical research projects. 31.

Brown, A., Rance, J., & Bennett, P. (2016). Understanding the relationship between breastfeeding and postnatal depression: the role of pain and physical difficulties. Journal of advanced nursing, 72(2), 273-282.

Buccini, G., Pérez-Escamilla, R., Kavle, J. A., Picolo, M., Barros, I., & Dillaway, C. H. (2019). Addressing barriers to exclusive breastfeeding in Nampula, Mozambique: opportunities to strengthen counseling and use of job aids. Washington DC: USAID's Maternal and Child Survival Program.

Cardoso, A., e Silva, A. P., & Marín, H. (2017). Pregnant women's knowledge gaps about breastfeeding in northern Portugal. Open Journal of Obstetrics and Gynecology, 7(3), 376-385.

Carvalho, M. L. D., Boccolini, C. S., Oliveira, M. I. C. D., & Leal, M. D. C. (2016). The baby-friendly hospital initiative and breastfeeding at birth in Brazil: a cross sectional study. Reproductive health, 13(3), 207-215.

Chang, P. C., Li, S. F., Yang, H. Y., Wang, L. C., Weng, C. Y., Chen, K. F., ... & Fan, S. Y. (2019). Factors associated with cessation of exclusive breastfeeding at 1 and 2 months postpartum in Taiwan. International Breastfeeding Journal, 14(1), 1-7.

Chaudhary, R. N., Shah, T., & Raja, S. (2011). Knowledge and practice of mothers regarding breast feeding: a hospital-based study. Health Renaissance, 9(3), 194-200.

Degefa, N., Tariku, B., Bancha, T., Amana, G., Hajo, A., Kusse, Y., ... & Aschalew, Z. (2019). Breast feeding practice: positioning and attachment during breast feeding among lactating mothers visiting health facility in Areka Town, Southern Ethiopia. International journal of pediatrics, 2019.

Emam, E. A. E. R., & Ali, A. S. (2017). Factors influencing breastfeeding practice after cesarean section delivery. J Nurs Health Sci, 6(5), 63-70.

Haider R. Kabir L, Hutty SR, Ashworth A. (2014): International Centre for health and population Research, Bangladesh. DMID: 1184542,

Hasan, S. S. (2016). Factors influence on Primigravida's knowledge regarding exclusive breastfeeding benefits in Maternity Teaching Hospital: Erbil city-Kurdistan region–Iraq. *Zanco Journal of Medical Sciences (Zanco J Med Sci)*, *20*(3), 1505_1512-1505_1512.

Hassan, S. K., & Abdelwahed, W. Y. (2015). Knowledge & practices of exclusive breastfeeding in Fayoum, Egypt. Egyptian Journal Community Medicine, 33, 61-77.

Heidari, Z., Kohan, S., & Keshvari, M. (2017). Empowerment in breastfeeding as viewed by women: A qualitative study. Journal of education and health promotion, 6.

Islam, K., Samad, N., Haque, M. M., Sadia, A., Adhikary, A. C., & Ahmed, N. (2017). Constraints of exclusive breastfeeding practice among breastfeeding mothers of Dhaka slums. J Nutr Food Sci, 7(637), 2.

Kaipparettu, B. (2018). constraints to exclusive breast feeding among postpartum mothers in selected rural area, Volume-7 | Issue-10 | October-2018 | ISSN No 2277 - 8179 | IF : 4.758 | IC Value : 93.98

Kavle, J. A., Picolo, M., Buccini, G., Barros, I., Dillaway, C. H., & Pérez-Escamilla, R. (2019). Strengthening counseling on barriers to exclusive breastfeeding through use of job aids in Nampula, Mozambique. PLoS One, 14(12), e0224939.

Kramer, M. S., & Kakuma, R. (2012). Optimal duration of exclusive breastfeeding. Cochrane database of systematic reviews, (8).

McFadden, A., Gavine, A., Renfrew, M. J., Wade, A., Buchanan, P., Taylor, J. L., ... & MacGillivray, S. (2017). Support for healthy breastfeeding mothers with healthy term babies. Cochrane Database of Systematic Reviews, (2).

Mgongo, M., Hashim, T. H., Uriyo, J. G., Damian, D. J., Stray-Pedersen, B., Msuya, S. E., & Msuya, S. E. (2014). Determinants of exclusive breastfeeding in Kilimanjaro region, Tanzania. Science J Public Health, 2(6), 631-635.

Mgongo, M., Hashim, T. H., Uriyo, J. G., Damian, D. J., Stray-Pedersen, B., Msuya, S. E., & Msuya, S. E. (2014). Determinants of exclusive breastfeeding in Kilimanjaro region, Tanzania. Science J Public Health, 2(6), 631-635.

Mosca, F.; Giannì, M.L. (2017): Human milk: Composition and health benefits. Pediatr. Med. Chir. 39, 155.[CrossRef] [PubMed].

Mundagowa, P. T., Chadambuka, E. M., Chimberengwa, P. T., & Mukora-Mutseyekwa, F. (2019). Determinants of exclusive breastfeeding among mothers of infants aged 6 to 12 months in Gwanda District, Zimbabwe. International breastfeeding journal, 14(1), 1-8.

Najem, B., & Al-Deen, L. D. (2011). Breast Feeding Problems in Primipara Mothers in Early Postnatal Period. Midwives, 9, 3-6.

Palmér, L. (2019). Previous breastfeeding difficulties: an existential breastfeeding trauma with two intertwined pathways for future breastfeeding—fear and longing. International journal of qualitative studies on health and well-being, 14(1), 1588034.

Rollins, N. C., Bhandari, N., Hajeebhoy, N., Horton, S., Lutter, C. K., Martines, J. C., ... & Group, T. L. B. S. (2016). Why invest, and what it will take to improve breastfeeding practices?. The lancet, 387(10017), 491-504.

Sayres, S., & Visentin, L. (2018). Breastfeeding: uncovering barriers and offering solutions. Current opinion in pediatrics, 30(4), 591-596.

Shakya, P., Kunieda, M. K., Koyama, M., Rai, S. S., Miyaguchi, M., Dhakal, S., ... & Jimba, M. (2017). Effectiveness of community-based peer support for mothers to improve their breastfeeding practices: A systematic review and meta-analysis. PloS one, 12(5), e0177434.

Shamir, R. (2016). The benefits of breast feeding. Protein in Neonatal and Infant Nutrition: Recent Updates, 86, 67-76.

Steurer, L. M. (2017). Maternity leave length and workplace policies' impact on the sustainment of breastfeeding: global perspectives. Public Health Nursing, 34(3), 286-294.

Still, R., Marais, D., & Hollis, J. L. (2017). Mothers' understanding of the term 'exclusive breastfeeding': a systematic review. Maternal & child nutrition, 13(3), e12336.

Tariku, A., Alemu, K., Gizaw, Z., Muchie, K. F., Derso, T., Abebe, S. M., ... & Biks, G. A. (2017). Mothers' education and ANC visit improved exclusive breastfeeding in Dabat Health and Demographic Surveillance System Site, northwest Ethiopia. PloS one, 12(6), e0179056.

Tella, K., Guruvare, S., Hebbar, S., Adiga, P., & Rai, L. (2016). Knowledge, attitude, and practice of techniques of breast-feeding among postnatal mothers in a coastal district of Karnataka. International Journal of Medical Science and Public Health, 5(1), 28.

Thakur, S., & Shukla, P. (2018). Effectiveness of Nutrition Education on the Knowledge of Primigravida and Multigravida Women about Exclusive Breastfeeding in Urban Slum of New Delhi. International Journal of Health Sciences and Research 8 (11).

Thomas, S., Mohanty, N., & Dasila, P. K. (2018). Effect of antenatal lactation counselling on knowledge and breastfeeding practices among mothers. Int J Health Sci Res, 8, 138-48.

Tilahun, G., Degu, G., Azale, T., & Tigabu, A. (2016). Prevalence and associated factors of timely initiation of breastfeeding among mothers at Debre Berhan town, Ethiopia: a cross-sectional study. International breastfeeding journal, 11(1), 1-9.

Tiwari, K., Savarna, N., & Khanam, I. (2018). A study on knowledge of breast feeding and effect of antenatal counselling on exclusive breast feeding in primigravida mothers. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 7(8), 3311-3316.

UNICEF global databases, (2018): based on MICS, DHS and other nationally representative sources.

UNICEF, D. (2019). Infant and young child feeding via https://data. unicef. org/topic/nutrition/infant-and-youngchild-feeding. accessed 20/7.

Victora, C. G., Bahl, R., Barros, A. J., França, G. V., Horton, S., Krasevec, J., ... & Group, T. L. B. S. (2016). Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. The lancet, 387(10017), 475-490.

Willumsen J. 2013: Breastfeeding education for increased breastfeeding duration: Biological, behavioural and contextual rationale [Internet]. [2013 July]. Available from http://www.who.int/elena/bbc/breastfeeding_education/en/.

World Health Organization (2015): Indicators for Assessing Infant and Young Child Feeding Practices [Internet]. Available from: http://www.who.int/nutrition/publications/infant feeding/9789241599757/en.

World Health Organization. (2017). Guideline: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services. World Health Organization.

World Health Organization. (2019). Exclusive breastfeeding for optimal growth, development, and health of infants. World Health Organization. https:// www. who. int/Elena/ titles/ exclusive breastfeeding/ en/. Published.