Assessment of pregnant women's knowledge about breastfeeding at Al-Hodiedah Governorate, Yemen

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Abstract
Breastfeeding is an essential and unrivalled method of providing perfect food for healthy growth of newborn. **The study aimed to**: Assess the knowledge about breastfeeding among Yemeni women. **Methods**: A descriptive cross-sectional design was carried out in the study. A purposive sample was used for recruiting 270 pregnant women at six primary health care facilities in Al-Hodiedah governorate, Yemen. **Result**: The present study revealed that 88.1% of the pregnant women mentioned that they immediately initiate breast feeding after birth. Also, 56% of pregnant women had correct definition of colostrums, and 45% of them pointed to benefit of colostrums as increase immunity of newborn. While less than one third of them said that exclusive breastfeeding is giving breast milk for six months without extra fluid. More than two fifths of them had poor total score of knowledge about breast feeding. **Conclusion**: Pregnant women from rural areas, and the illiterate/read and write mothers had poor knowledge as well as the primary gravidity. **Recommendation**: Increasing the pregnant women's knowledge about breastfeeding through health education in health facilities.

Keyword: Knowledge, Assessment, Breastfeeding & Pregnant Women.

Introduction
Breastfeeding is an essential and unrivalled method of providing perfect food for the healthy growth of newborn. Exclusive Breast Feeding (EBF) is defined as infant breast-feeding with only mother's milk without the addition of any other fluid, or liquids or solids during the first six months of infant's life (**WHO, 2013**). Exclusive breastfeeding and breastfeeding along with safe and adequate complementary extra food afterward up to two years of age and it plays a critical role in child health (**Victora, et al., 2016, Agunbiade et al., 2012, & Harnisch, 2012**). In spite of strong evidences that in encourage and support of EBF for the first 6 months of the infant's life, its prevalence has still remained all low over the world (**Cai, et al., 2012**). Moreover, it is estimated that "one-third of infants were exclusively breastfed for the first 6 months of life". Breastfeeding provides a variety of health benefits to both baby and mother, with stimulate of newborn, immune system to protect infants against a number of acute and chronic diseases such as diarrhea and acute respiratory infections (**WHO, 2013**).

Breastfeeding is a good healthier selection for the mother, baby and family. Moreover, breastfeeding rates for EBF have not reached to health organization's goals in several countries (**WHO, 2013**)

Usually breastfeeding is physically exhausting and emotionally demanding. For mothers, breastfeeding is not instinctive, but rather a learned process. Therefore, mothers need to begin the preparation for breastfeeding during pregnancy. To breastfeed with success, mothers needs to learn about proper position, latch, sucking and signs of milk transfer, hunger cues, and the infant's receptiveness to breastfeeding (**Exavery et al., 2015**).

In the world, 5.9 million children die every year before they reach the age of five years. Out of them, 45% die in first month after birth (**WHO, 2016**). The nurse's role in all pregnancy phases focuses on promoting healthy growth and development of the child and family in health and in illness" **(Huggins, 2015)**.

Significant of study
In Yemen: children and newborn care is poorly managed; 42 percent of children deaths occur before they reach the age of 5 years, half of those deaths occur during the first months of children's life. Three quarter (75%) of children who died in the first month they died in the first seven day of their life. Al-Hodeida governorate is considered as one of the highest children deaths rate in Yemen, estimated at children <5 years 66/1000, infant 49/1000, and newborns 29/1000 (**MoPHP-Yemen, 2011**).

Research aim

Assessment of pregnant women's knowledge about breastfeeding in Yemen.

Research question

- Do the mothers know the proper time for starting breastfeeding?
- Do the mothers know what is meaning of exclusive of breastfeeding?
- What are the benefits of breastfeeding for newborns?

Subjects & methods

Research design

A descriptive cross-sectional research design was done.

Research Setting

This study was conducted in three districts (Al-Hok, Biat-Alfaqi, and Al-Mrawah) at Al-Hodiedah governorate. It included 3 out of 10, (30%) of urban health centers and 3 out of 30, (10%) of rural health units. It was carried out in the East, the South of Al-Hodiedah governorate and Al-Hodiedah city.

Target population: all pregnant women who agreed to participate in the study, and were eligible and meet the inclusion criteria.

Inclusion criteria

- Pregnant women should be during third trimester.
- Attended to health facilities for antenatal care.

Sampling and sample size

Pregnant women were recruited during their visit to the six health center at antenatal care appointment. The districts, urban health centers, and rural health units were selected randomly. Also the convenient sample used in chosen the pregnant women to participate in this study, the total number of the studied sample was 70 pregnant women who consented to participate in this study.

Tools of the study

Structured interview questionnaire

The interview questionnaire sheet was developed by the researcher based on the review of relevant literature. It included two parts: -

Part (1): Personal characteristics of participant mothers included: age, level of education of mother, residence, number of gravidities, and number of parity.

Part (2): It is included the knowledge of pregnant women related to breastfeeding. It included breast care, colostrums, breast feeding, newborns position during breastfeeding and burping after breastfeeding, the benefit of breastfeeding for baby, exclusive breastfeeding.

The Scoring system was developed for knowledge as follows: zero grade for the incorrect answer and I don't know. While one grade for the correct answer. Sum the correct answer and converted it to percentage. The total knowledge score was determined by **(Al-hebshi et al., 2017, & Al-Dubhani et al., 2014)** who estimate the answer by taking point as the score divided into

- Poor<50%
- Average 5o % < 70%
- Good >70%

The Validity of Tools: The tools were translated to Arabic language and reviewed to ascertain their validity by the panel of five experts from community health nursing staff at Assiut University, who reviewed the tools for their clarity, relevance, and comprehensiveness, understanding, and applicability.

Reliability Test: Reliability is applied by the researchers for testing the internal of the tool, by administration of the same tools to the same subjects under similar conditions two times 15 days apart. Cronbach's Alpha reliability for knowledge was 7.81.

Methods

I -Administrative Phase

An official letter of approval was obtained from the Dean of the Faculty of Nursing and the chairman of community health nursing department, Assiut University to Ministry of Health in Al-Hodiedah h governorate-Yemen, and to health districts authorities and directors of the health facilities to carry out this study. Finally, the letters included a permission to carry out the study.

II-Research Pilot

A pilot study was carried out before starting of data collection on 10% of the pregnant women, who were included in the sample. The purpose of the pilot study was to test the clarity of the tools and estimate the required time to fill the questionnaires.

Ethical consideration

Research proposal approved from Ethical Committee in the Faculty of Nursing at Assiut University. There is no risk for study subject during application of the research. The women were informed about the objectives of the study and they are free to refuse participation in the current study. Oral consent obtained from the target. Confidentiality of obtained information was assured as the obtained information was used only for the purpose of the study.

III. Data Collection:

Researchers started collection of data from pregnant women during the period from 20 January till the end of April 2016.

- Every day about 4-5 sheets were finished for 4 days per week, this was according to a response of pregnant women.
- The interviews administered by researcher. Face to face interview was conducted individually with each pregnant woman in a separate room at health centers. Every interview took from30-40 minutes.

V. Statistical analysis

The data obtained were reviewed and prepared for computer entry, coded, analyzed and tabulated. Descriptive statistics as percentage mean and

standard deviation were done using computer program SPSS version (21). Chi-square test and it is considered significant when P-value less than 0.05.

Results

Table (1): Distribution of personal characteristics of studied pregnant women in Al-Hodiedah, Yemen 2017 (n= 270).

Items of personal characteristics	No. (n= 270)	%
Age: (years)		
< 25	116	43.0
25 – 30	77	28.5
> 30	77	28.5
Mean ± SD (Range)	26.83 ± 6.61 (16.0 – 45.0)	
Residence:		
Rural	141	52.2
Urban	129	47.8
Mother education		
Illiterate/ Read & write	109	40.4
Basic education	100	37.0
Secondary/ University	61	22.6
Gravidity		
PG	51	18.9
2 – 4	157	58.1
5 or more	62	23.0
Parity		
None	51	18.9
Once	51	18.9
2 – 4	106	39.3
5 or more	62	23.0

The total number of once + (2-4) parity =157

Table (2): Distribution of pregnant women knowledge about breast care in Al-Hodiedah, Yemen 2017(n= 270).

Items of knowledge	No. (n= 270)	%
Washing breast is important before breastfeeding		
Yes	106	39.3
No	164	60.7
Methods of breast washing before breastfeeding: n=(106)		
Cycle	35	33.0
From inside to outside	11	10.4
From outside to inside	19	18.0
Randomly	41	38.6
#Substance used for clean the breast washing: n=(106)		
Water	61	57.5
Water and soap	35	33.0
Cloths	20	19.0

#= more than one answer

Table (3): Distribution of pregnant women knowledge about colostrum in Al-Hodiedah governorate, Yemen 2017 (n=270).

Items of knowledge	No. (n= 270)	%
Initiation of breastfeeding		
Immediately after birth	238	88.1
After hours	16	6.0
After days	11	4.0
Don't know	5	1.9
Definition of colostrums		
Mother breast milk during fist days	151	56.0
Pus and Blood in mother breast	119	44.0
It's important to give give colostrum for your baby		
Yes	247	91. 5
No	23	8.5
#Benefit of colostrums for newborn		
To improve newborns growth	92	37.2
protect the newborn from diseases	97	39.3
Increase the immunity of newborn	111	45.0

#= more than one answer

Table (4): Distribution of pregnant women knowledge about breastfeeding in Al-Hodiedah governorate, Yemen 2017 (n=270).

Items of knowledge	No. (n= 270)	%
Giving breastfeeding for newborn		
On demand	204	75. 6
By schedule	66	24.4
#Method to encourage newborns for breastfeeding		
Skin to skin contact	70	26.0
Give others fluid	70	26.0
Put nipple in newborn mouth	102	38.0
Don't know	53	20.0
Signs show that the newborn has enough breastfeeding		
Don't know	14	5.2
Leave breast	140	52.0
Sleep	116	43.0
#Ways to increase breast milk secretion		
Drink fluids	108	40.0
More food	165	61.1
Drink tea	85	31.5
Diversity food	143	53.0
#Benefits of breastfeeding for newborns		
For growth of newborns	208	77.0
Preventive of diseases	98	36. 3
Strength relationship with mother	167	62.0

#= more than one answer

Table (5): **Distribution of pregnant women knowledge about newborn position and burping after breastfeeding in Al-Hodiedah, Yemen 2017 (n=270)**.

Items of knowledge	No. (n= 270)	%
# safe and comfort newborns position after breastfeeding		
On right-hand side	58	21.5
On left-hand side	35	13.0
On back	178	66.0
On abdominal	8	3.0
Don't know	14	5.2
Burping newborns after breastfeeding		
Yes	180	66. 7
No	90	33.3
#Importance of burping newborns		
Improve the gestation	68	37. 8
Take out the over milk	49	27.2
Take out the air	96	53.3
Don't know	47	26.1

Table (6): The relation between personal characteristics and total score of pregnant women's knowledge about breastfeeding in Al-Hodiedah, Yemen 2017 (n=270).

Personal characteristics	Level of knowledge						P-value
	Poor		Average		Good		
	No.	%	No.	%	No.	%	
Age: (years)							
< 25	56	48.3	43	37.2	17	14.7	0.639
25 – 30	36	46.8	34	44.2	7	9.1	
> 30	32	41.6	34	44.2	11	14.3	
Residence							
Rural	74	52.5	47	33.3	20	14.2	0.024*
Urban	50	38.8	64	49.6	15	11.6	
Mother education							
Illiterate/ Read & write	75	68.8	34	31.2	0	0.0	0.000*
Basic education	33	33.0	55	55.0	12	12.0	
Secondary/ University	16	26.2	22	36.1	23	37.7	
Gravidity							
PG	26	51.0	14	27.5	11	21.6	0.144
2 – 4	71	45.2	69	43.9	17	10.8	
5 or more	27	43.5	28	45.2	7	11.3	
Parity							
None	26	51.0	14	27.5	11	21.6	0.104
Once	23	45.1	26	51.0	2	3.9	
2 – 4	48	45.3	43	40.6	15	14.2	
5 or more	27	43.5	28	45.2	7	11.3	

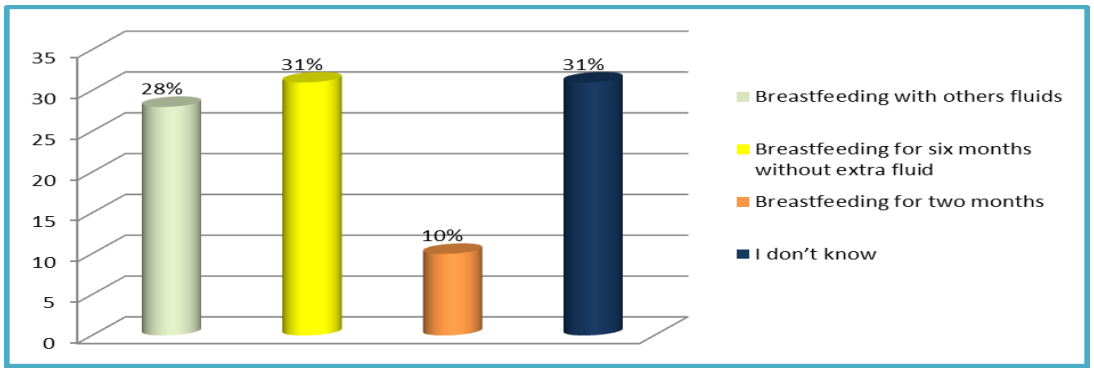

Figure (1): Distribution of pregnant women according to their knowledge about the definition of Exclusive Breastfeeding in Al-Hodiedah Governorate, Yemen 2017 (n=270)

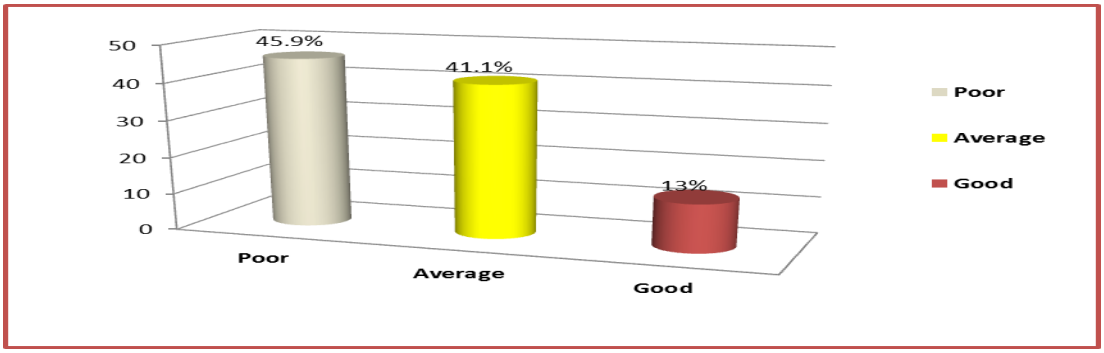

Figure (2): Distribution of the pregnant women according to their total score of knowledge about breastfeeding

Table (1): Two hundred and seventy pregnant women participated in this study, their' age ranged from16 to 45 years old, and more than two-fifths 43% of the study sample was under the age 25 years with mean score = 26.83 ± 6.61. More than half of the participants are residence in rural areas 52.2%. In addition 40.4% of them were illiterate/ write and read, followed by 37% have basic education. Also, 22.6% have secondary and university education. While 58.1% of the participant had two to four gravidity and 39.3% had two to four births.

Table (2): Shows that, 60.7%of pregnant women said that it is not important to wash breast before start breastfeeding. While, 38.6% out of 106 pregnant have wrong knowledge about the method of wash breast, and 57.5% of them pointed that they use water only for washing breast.

Table (3): Shows that 88.1% of pregnant women indicted that they initiate breastfeeding immediately after birth. While 56% of participants mentioned that colostrum as mother's breast milk during first days, and 91.5% of them said that they give colostrum for newborns. Regarding to the benefits of colostrum, 45%, 39.3%, and 37.2% respectively of pregnant women pointed to increase the immunity of newborns, protect newborn from diseases and improve the growth newborn.

Table (4): Revealed that 75.6% of pregnant women mentioned that they breastfeed their newborn on demand. Concerning encouraging newborns to breastfeeding, only 38% of participants pointed to put their breast nipple in newborn's mouth as method to encourage newborn to breast-feeding. While 52% of them reported that newborn leave the mother breast when they have enough breastfeeding. Concerning, the increasing breast milk secretion, table 4 showed that only 40.0% of pregnant women mentioned to drink fluids. While 53% of them motioned that they eat diversity of food. As regard to breastfeeding's benefits for newborns. It was observed that 77% and 62% of studied pregnant women mentioned that breastfeeding help newborns to growth and strength relationship between newborns and their mothers.

Table (5): Illustrates the distribution of pregnant women regarding their knowledge about newborns position after breastfeeding and burping after breastfeeding. It revealed that 66% of pregnant women pointed to wrong answer (put newborns at back position after breastfeeding). Also, this table showed that 66.7%of pregnant women indicted to burping newborn after breastfeeding. While out of 180 pregnant women; 53.3% of them mentioned the importance of burping after breastfeeding of newborns to take out the air.

Table (6): Shows that the relation between personal characteristics and the total score of knowledge about breast feeding among pregnant women, it was noted that 14.2% of pregnant women in rural areas had good knowledge, compared to 11.6% of pregnant women from urban areas with statistical significant difference p=(0.024). Also, this table revealed that 37.7% of pregnant women with secondary and university educate had good knowledge. Regarding illiterate/ read and write of participants none of them (0.0%) had good knowledge about breastfeeding. There is a significant difference between mothers' education and total score of knowledge about breastfeeding p= 0.000 respective.

Figure (1): Regarding to pregnant women's knowledge, only 28% of them had motioned that exclusive breastfeeding mean giving breast milk to infants without other extra fluids up to six months.

Figure (2): Illustrates the total score of knowledge among pregnant women about breastfeeding, it was cleared that 45.9% of them had poor knowledge, followed up by 41.1% had average knowledge and 13% had good knowledge.

Discussion

Breast milk is important for a neonatal and infant to build strong body when growth and development are occurring rapidly with newborns' systems are functionally immature, and protect newborn from diseases and malnutrition **(Rollins et al., 2016).**

Breastfeeding is one of the most important determinants of newborn infant's survival **(WHO, 2014)** It lowers the possibility of ear infections, meningitis, colon infections, urinary tract infections and diarrhea. Also, it is protecting babies from allergies and digested easily **(Huggins, 2015).**

In the present study, more than two fifths of the pregnant women aged less than 25 years with mean± SD 26.83±6.61. This result was supported by **Lilungulu, et al., (2016**) who conducted their study in Tanzania, and they reported that the slight less than three fifths of the study participants aged from 19-25 years with mean± SD age 25.5±3.1 years. Present results showed that the most pregnant women were at age 26 years. According to mother's education, the present study revealed that two fifths of the pregnant women were illiterate/ read and write. Concerning to the parity, about two fifths of pregnant women had from 2 to 4 births. These results disagree with **Lilungulu, et al., (2016)** study**,** who found that one fifth of women have more than three children.

Regarding the total score of pregnant women's knowledge about breastfeeding, the present study revealed that, more than two fifths of the pregnant women had poor knowledge level, and followed up slightly more than two fifths of them have average knowledge level. Poor knowledge of pregnant women in present study results may be due to low education and half of them were from rural areas.

Concerning the pregnant women's knowledge towards start initial breastfeeding, it was noted that the majority of pregnant women mentioned that they start breastfeeding immediately after birth. This is because most young mothers live in extended families and the grandmother's advise them to give breast milk for babies immediately after birth. The present study findings were in the same line with **Hashim et al., (2017)** who conducted their study in Tanzania. They noted that more than two third of pregnant women had pointed that they start breastfeeding immediately into one hour after birth. Other study carried out by **Gualu, et al., (2017)** in Ethiopia**;** agrees also with the current study, they revealed that slightly more than three quarters of participant's women start breastfeeding into the first hour after birth. Another study carried out by **Shrestha et al., (2013)** in Nepal, was in the same line with the present study, who revealed that 70% of the participants had knowledge about early initiation of newborns breastfeeding. Also, the present study result was supported by **Exavery et al., (2015)** who conducted their study in rural Tanzania, and they found that slightly more than half of households had motioned that they started breastfeeding early within the first hour after birth. On another hand, the present result disagreed with **Parashar, et al., (2015)** who, carried out their study in Delhi, India. They find out that only 16% of mothers started breastfeeding immediately within the first hour.

The findings of the present study indicate that more than half of the pregnant women had pointed to correct definition of colostrums. These results agree with **Aisha et al., (2016)** who conducted their study in Pakistan and they revealed that 65% of pregnant women had correct definition of colostrum. Other two studies, one was carried out by **Gualu et al., (2017**) and other study carried out by **Joshi, et al., (2012)** in Nepal. They showed that more than three quarters of the participant women have knowledge about colostrums. Also, current study result disagreed with **Shrestha, et al., (2013)** who revealed that all women had knowledge about colostrums.

Concerning the pregnant women's knowledge towards colostrums feeding for newborns. It was noted that the majority of the pregnant women in the present study reported that colostrums should be given for baby. This result agrees with **Gualu, et al., (2017**) who revealed that majority of women, feed colostrum for their babies. While, the present study results disagree with another study carried out by **Parashar, et al., (2015)** in Delhi who showed that

less than three fifths of participants had given colostrum for their newborns.

Concerning the benefit of colostrum for newborns, the current study revealed that more than two fifths, more than one third and slightly less than two fifths respectively of pregnant women mentioned that colostrums increase the immunity of newborns, and improve newborns growth and protect newborn from diseases. The present study's results disagree with **Aisha, et al., (2016**) who reported that only less than one tenth of pregnant women pointed to the benefit of colostum for newborns as help to improve the growth of the babies and fight against infections. On the other hand, of this study results disagree with the study carried out by **Shewasinad, et al., (2017)** in Ethiopia, who reported that two third of pregnant women have knowledge about advantages of colostrums for their babies.

According to the findings of the current study, three quarters of the pregnant women are breastfeed their babies on demand. This result agrees with **Cardoso, et al., (2017)** study in Northern Portugal, they reported that majority of pregnant women had knowledge; the breastfeeding must be offered on demand of baby.

In the present study, only less than one third of the pregnant women knew the correct the definition of exclusive breastfeeding. Many mothers give their babies fluid to avoid thirsty because the weather is very hot in Al-Hodiedah governorate. This result disagrees with the findings of three other studies carried out into the developing countries which showed that the majority of their participants knew the correct definition of exclusive breastfeeding (**Vijayalakshmi, et al., 2015)** study in India**.** Other study was carried out by **Aliyu, & Shehu (2014**) in Nigeria, they revealed that more than two third of pregnant women knew the accurate definition of exclusive breastfeeding.

Concerning the importance of burping of the newborn to take out the air. It was clear that two third of the pregnant women reported that the burping procedure is important for taking out the air after newborns finish breastfeeding. This result disagreed with **Parashar, et al., (2015)** who revealed that about three quarters of the participant had not induced burping after breastfeeding.

Regarding the relation between the total score of pregnant women's knowledge about breastfeeding and their personal characteristics in the current study it was observed that more than one third of mothers had secondary/ university education had good score of knowledge and none of mothers who are illiterate/ read and write had good score of knowledge regarding to breastfeeding. This result was in same line with **Cardoso et al., (2017)**, who confirmed that participants with high education levels had high knowledge than with basic education with p=(0.000). This difference between the current study and other studies may be explained by difference in culture traditional habits and socioeconomic status

Conclusion

based on the results of the present study, it concluded that pregnant women from rural areas had poor knowledge. Also, the illiterate/read and write mothers had poor knowledge as well as the primary gravidity. Moreover, lack of knowledge about the ways to increase breast milk secretion but they know the benefit of breastfeeding for newborn. The mothers in urban areas had average knowledge about breastfeeding than rural areas. Also the mothers who had secondary/university education had good total score of knowledge toward breastfeeding.

Recommendation

- Increasing the pregnant women's knowledge about breastfeeding through health educational in health facilities.
- Use the public media resources to educate mothers about breastfeeding such as local radio

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