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The effect of antenatal breast-feeding education on early breastfeeding initiation and exclusive breast-feeding rates in Al Dhaid hospital.

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Abstract:

Background: The importance of breastfeeding for both infants and mothers are globally recognized. Providing adequate education regarding breastfeeding during pregnancy and throughout the breastfeeding experience, encouragement when challenges or problems arise, and appropriate management for feeding problems that need medical attention help increase breastfeeding rates.

Objectives
1.To assess effect of antenatal breast-feeding education on early breastfeeding Initiation in Al Dhaid Hospital.
2.To assess the effect of antenatal breast-feeding education on exclusive breast-feeding rates in Al Dhaid Hospital

Methods: A cohort, quantitative study using a retrospective Medical Record Review and online survey study carried out through WhatsApp. The participants were mothers who got antenatal breast-feeding educational interventions from Al Dhaid Hospital during the months of January 2021 to February 2022 with respect to inclusion and exclusion criteria.

Results: The survey results of 110 mothers who received the survey and were delivered in Al Dhaid Hospital, reveals that all of them (100%) received the antenatal breast-feeding education and n=85(77%) mothers followed very good breast-feeding practice and n=24 (22%) have good breastfeeding practice and only n=1(1%) having Poor breast feeding Practice that needs improvement. Also, majority of mothers who received the education session demonstrated an early initiation of breast feeding immediately or within 1-hour n=73 (66.4%) and exclusive breastfeeding n=90 (81.8%).

Conclusion
The study revealed that antenatal breast-feeding education positively influence on early breastfeeding Initiation and compliance to exclusive breast-feeding.

Index Terms – Exclusive breastfeeding, Early initiation of breastfeeding, Antenatal Education, breast feeding education.

I. INTRODUCTION

The importance of breastfeeding for both infants and mothers are globally recognized [1]. Breastfeeding is a unique way of providing ideal food for the healthy growth and development of infants [2]. Breastfeeding is known to have a beneficial effect in enhancing infants' immunity, promotion of exclusive breastfeeding until age 6 months in a developing country through existing primary health-care services is feasible, reduces the risk of diarrhea, and does not lead to growth faltering [3]. Upper and lower respiratory tract infections occurred with lesser prevalence among exclusively breast-fed younger infants [4]. Also, Evidence is strong that breast feeding protects against diarrhea and lower respiratory disease as well as otitis media. Breast feeding may also be protective against necrotizing enterocolitis, bacteraemia, meningitis, botulism and urinary tract infection. Breast feeding has also been reported in some studies to be protective against diabetes, inflammatory bowel disease and childhood lymphoma [5]. The addition to the breast-milk diet of even water, teas, and other non-nutritive liquids doubled or tripled the likelihood of diarrhea [6]. Breast feeding may help prevent the major cause of deaths due to pneumonia of children younger than 5 years [7]. Breastfeeding is associated with reduced risk of chronic diseases such as diabetes mellitus type 2 [8] and Breast-feeding seems to have a small but consistent protective effect

against obesity in children. Prolonged breastfeeding is dose-dependent association with a reduced risk of overweight among non-Hispanic white children. Breastfeeding longer than 6 months provides health benefits to children well beyond the period of breastfeeding [9-11]. Infants' risk for excess weight during late infancy was negatively associated with breastfeeding intensity but positively associated with infant-initiated bottle emptying during early infancy and initial breastfeeding protects against obesity in later life [12-13] Breastfeeding is regarded as the simplest and least expensive strategy for reduction of infant mortality rates. Exclusive breastfeeding is defined as the act of feeding the infant only breast milk, with no supplemental liquids or solids except for liquid medicine or vitamin/mineral supplements [14]. During the first 6 months of life, breast milk alone is the ideal nourishment for infants, (providing all the necessary nutrients, including vitamins and minerals [15].The World Health Organization (WHO) recommends continued breastfeeding up to 2 years of age or beyond and it has been estimated that optimal breastfeeding of children younger than 2 years, could annually save the lives of over 800,000 children under 5 years of age [16].The knowledge, attitudes, and practices among women regarding breastfeeding vary in different countries. In the United Arab Emirates (U.A.E.), a recent study involving 593 Emirati mothers showed that the feeding practices of infants and young children were suboptimal. Although almost all the mothers in the study had initiated breastfeeding (98%), only 25% of the infants had been exclusively breastfed since birth at 6 months of age [17]. Providing adequate education regarding breastfeeding during pregnancy and throughout the breastfeeding experience, encouragement when challenges or problems arise, and appropriate management for feeding problems that need medical attention help increase breastfeeding rates. [18]. There is limited local data on the influence of antenatal education on early breastfeeding Initiation and exclusive breast-feeding compliance in Al Dhaid hospital. Research in this field is vital to explore outcome of breast-feeding educations on practices regarding early initiation and exclusive breastfeeding among women. In an effort to maintain the status of a Baby-Friendly designated facility, the effectiveness of breastfeeding education at Al Dhaid Hospital needs to be evaluated. This study aims to assess the effect of breastfeeding education on timely initiation and exclusive breastfeeding in our facility.

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II. LITERATURE REVIEW

The World Health Organization (WHO) recommends that all new born babies should be placed in skin-to-skin contact with their mothers immediately after birth and initiate breast-feeding within 1 h of birth [19].All infants should be exclusively breast-fed for the first 6 months of life and continued breast-feeding for up to 2 years or beyond with timely, adequate, safe and appropriate complementary feeding beginning at 6 months of age [20].Breast-feeding is universally accepted as the easiest, safest, most effective and most successful intervention for the satisfactory physical and mental health of children and provides lifelong benefits for both the mother and child [21-22]. Colostrum, which is thick yellowish breast milk produced during the first days after delivery is highly nutritious and it is the most immunologically protective secretion of the breast during lactose-genesis [23].and serves as antiantibodies for new born from diseases [24] Breast milk provides the nearly perfect mix of vitamins, protein and fat – everything a baby needs to grow to be ideal nutrition for infants and it is all provided in a more easily digested form [25]. It is also lengthening maternal postpartum amenorrhea and birth interval which is strongly related to infant and young child survival giving women more time to recover from childbirth and baby care [26]. Timely initiation of breast-feeding prevents neonatal early in the first 28 d of birth, including all causes of mortality [27]. Children who are exclusively breast-fed in the first 6 months of life are more likely to survive than non-breast-fed children [24] and about 41 % of global under-five deaths that occurs in Sub-Saharan Africa (SSA) are mainly due to inadequate breastfeeding practices combined with a high burden of diseases [28]. Globally, only 38% of infants aged 0 to 6 months are exclusively breastfed. Recent analyses indicate that suboptimal breastfeeding practices, including non-exclusive breastfeeding, contribute to 11.6% of mortality in children under 5 years of age [29].

A study to describe an interactive web-based breastfeeding monitoring system (LACTOR), illustrate its components, explain the theoretical framework, and discuss its assessment as a model for an innovative breastfeeding support intervention concludes that the system is feasible and acceptable among breastfeeding mothers and a promising tool for maintaining communication between mothers and lactation consultants. Providing education throughout pregnancy offers the new mother an opportunity to make an informed decision regarding the feeding choice for her new-born. As she begins to breastfeed her new-born, her confidence is bolstered. Frontline nurses can begin by increasing the mother's breastfeeding knowledge base, and continue to support and promote her feeding efforts [31]. Lactation consultants integrated into routine care alone and combined with electronically prompted guidance from prenatal care providers increased breastfeeding intensity at 3 months postpartum [32]. Breastfeeding is associated with improved health outcomes for both mother and child. Not only does it provide optimal nutrition for the infant, it also encourages an intimate maternal-infant bonding experience that establishes the basis for parenting and interaction. Telephone-based advisory support was very effective in prolonging breastfeeding in obese mothers who often terminate the breastfeeding of their infants prematurely. A longer duration of breastfeeding may decrease risk of noncommunicable diseases in these infants [33-34]. Prolonged and exclusive breastfeeding has been shown to promote brain development, leading to significantly higher vocabularies and higher verbal IQ scores than other children [35]. Despite the numerous benefits that promote breastfeeding, there are still many factors that lead mothers to cease breastfeeding after beginning or hinder mothers from ever even initiating breastfeeding. These factors include: mother's obesity, breastfeeding pain, lack of confidence, inadequate amounts of milk production, maternal employment, diabetes, high blood loss, and lack of privacy [36]. Intention to exclusively breastfeed is strongly correlated with how confident and motivated a woman feels she is to initiate and maintain exclusive breastfeeding and how important she believes initiating and maintaining breastfeeding is for her infant. Individualized antenatal breastfeeding education and support may be strengthened by strategies that build a woman's confidence to exclusive breastfeeding. Implementing psychosocial supports and methods providing positive feedback that increase a woman's self-efficacy to exclusively breastfeed to six months are also important two months postpartum [37]. For mothers who breastfeed, benefits include a lower risk for breast and ovarian cancers, depression, and Type II diabetes. Mothers who are obese and participate in prolonged nursing decrease the risk of subsequent obesity during infancy and adulthood. Breastfed babies have increased protection from infection and illnesses such as diarrhea, ear infections, and pneumonia and are less likely to develop asthma. In later life, exclusive breastfeeding may be associated with lower blood cholesterol. Adults who were breastfed as babies may be less likely to develop risk factors for heart disease such as obesity and hypertension [38].

The Baby Friendly Hospital Initiative (BFHI) is a global program that was launched by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) in 1991 to encourage and recognize hospitals and birthing centers that offer an

optimal level of care for infant feeding and mother/baby bonding. By providing a comprehensive breastfeeding education plan to perinatal nursing staff, it has been demonstrated that the Baby Friendly Health Initiative is a valid breastfeeding educational program and leads to increased exclusive breastfeeding rates. In 2007, only 2.9 percent of U.S. births occurred in Baby-Friendly designated facilities. Today, 6.9 percent of births occur in Baby-Friendly designated facilities. The Healthy People 2020 goal of 8.1 percent would be eclipsed if all hospitals embraced this evidence-based program before 2020 [. Becoming a Baby-Friendly facility is a comprehensive, detailed and thorough journey toward excellence in providing evidence-based, maternity care with the goal of achieving optimal infant feeding outcomes and mother/baby bonding. By providing a comprehensive breastfeeding education plan to perinatal nursing staff, it has been demonstrated that the baby Friendly Health Initiative is a valid breastfeeding educational program and leads to increased exclusive 4 Breastfeeding Education & Breastfeeding Rates breastfeeding rates. A multidisciplinary team approach is an effective way to develop a plan to support breastfeeding nursing education based on the principles of the BFHI and effectively change breastfeeding culture and increase exclusive breastfeeding rates in a large academic medical setting [39-41].While describing the breast-feeding pain, one study recommended that primary care providers adopt evidence-based practices for breastfeeding and breastfeeding pain that support women in successfully reaching their breastfeeding goals [42].Barriers to breastfeeding and the quality of breastfeeding support, instruction, and resources have been shown to predict breastfeeding success. While most women are aware that breastfeeding is the best source of nutrition for infants, they often lack knowledge regarding the numerous health benefits or reduction in health risks that occur through breastfeeding. This lack of knowledge inhibits mothers from properly weighing the advantages and disadvantages of breastfeeding to make an informed decision [43-44]. Increased exclusive breastfeeding rates are best achieved with specific, measurable, attainable, realistic, and timely goals. In order to increase breastfeeding rates, it is important to provide mothers with adequate information and support, especially during their antenatal visits, hospital stay. However, the health care workers are overburdened with their assigned tasks which hinder them from providing the support lactating mothers need, particularly during the immediate postpartum period when women may give up breastfeeding due to difficulties they may face. Breast-feeding practices and patterns vary across populations and between individual mothers, and depend on a number of factors. Pregnant women revealed a significant lack of knowledge to support basic breastfeeding decisions. The focus of care should emphasize on the younger, the first-time mothers and less well-educated women as particular vulnerable and poorer prepared groups concerning breastfeeding knowledge [45-46].

The purpose of this study is to determine whether or not there is a statistically significant difference in the numbers of mothers who initiated early breastfeeding and continued exclusive breast feeding after the teaching intervention delivered by health care provider at Al Dhaid Hospital.

Research Question

What are the effects of educational interventions on early breast-feeding initiation and exclusive breastfeeding rates?

Hypothesis

There is a relationship between Effective Antenatal breast-feeding and mother's compliance with early breastfeeding Initiation and exclusive breast-feeding rates.

Null Hypothesis

There is no relationship between Effective Antenatal breast-feeding and mother's compliance with early breastfeeding Initiation and exclusive breast-feeding rates.

III. RESEARCH METHODOLOGY

A cohort, quantitative study conducted using a retrospective Medical Record Review and online survey out through WhatsApp. The participants were all mothers who got antenatal breast-feeding education from Al Dhaid Hospital, Sharjah during the months of January 2021 to February 2022 with respect to inclusion and exclusion criteria (p-150). Multiple educational interventions including 2-3 one to one educational sessions, Video show & Demonstration. This includes one to one discussion or by group discussion provided by the lactation clinic staff- Lactation nurse. A booklet "Breastfeeding guide" is given to all clients at first visit. For primes a DVD is given "From Pregnancy to Breastfeeding ". The booklet and DVD are provided by the Breastfeeding Friends association. Patients breastfeeding education is documented at Electronic Medical record.

3.1 Population and Sample

The sample mothers selected retrospectively using a non-probability purposive sampling method from the Electronic medical Record with respect to inclusion and exclusion criteria.

Inclusion criteria:

1. Pregnant woman received breast feeding educational session from January 2021 to February 2022 in Al Dhaid Hospital.
2. Mothers aged between 18-45 yrs., whose children aged more than 6 months and less than 2 years of age at the time of study.
3. Willing to give consent to participate in the study and answer all questions.
4. Arabic, English, Hindi speaking Mothers.

Exclusion criteria:

1. Women delivered stillborn infants,
2. Mother who delivered Infants who require additional medical care that prevents breastfeeding, infants with genetic disorders
3. (e.g. cleft lip/palate, Trisomy),
4. Mother who delivered Infants who were transferred to a higher level of neonatal care,
5. Mothers having lactation failure due to underlying medical reasons, in whom breastfeeding is contraindicated.
6. Declined to participate.

The sample consist of 110 mothers who received antenatal educational session and willing to participate voluntarily after being fully informed about the objectives and methods of the study. They sign an informed consent form and asked to fill an online survey questionnaire.

3.2 Data and Sources of Data

The on-line structured questionnaire distributed by Research Team to the mothers as per inclusion criteria. The survey includes mothers' demographics and breastfeeding practices. Early breast-feeding initiation measured using retrospective data collected through medical file review and exclusive breast-feeding compliance assessed by the Mother reported on-line survey. The surveys distributed online between October 2022 to December 2022. Several questions included in these surveys were based on existing research about breastfeeding practices, expectations, and opinions. After creating a list of possible questions to include in this survey, feedback was requested from local stakeholders in order to ensure that the information collected would be relevant to measure breastfeeding outcomes. Survey questions were structured to be close - ended in order to simplify the selection process and also help to categorize similar experiences among respondents. In addition, mothers instructed to complete the survey by answering each question for their youngest child only to collect the most current information possible. The survey will be included a total of 17 questions including demographics, breastfeeding practices. The survey was designed to take respondents approximately 10-15 minutes to complete and it is available in English, Arabic and Hindi. Data collected using the Retrospective Electronic Medical record and by using an on-line survey report obtained from the mothers by Researcher Nurses.
Parametric or non-parametric statistics used to assess impact of breast-feeding education on breast feeding initiation and exclusive. The selection made based on the types and normality of variables.

3.3 Ethical considerations

Ethical approval to conduct the study obtained from MOHAP Research Ethical Committee before the start of the study. Also, all the data gathered as part of this study will be anonymous, thus fully protecting the participant's confidentiality. No risks are expected on participants as part of being part of this study.

IV. RESULTS

DESCRIPTION OF PARENT RESPONDENT DEMOGRAPHICS

TABLE 1: The table below provides an overview of demographic characteristics for all parent attended antenatal breast-feeding education and who completed the online Survey (N=110).

Mothers Profile (n-110)		No.	%	P Value
Mother age	<25	0	0.0	
	25–29	62	56.4	
	30–34	0	0.0	
	35–39	47	42.7	
	40–44	1	0.9	
Child Age	6 to 12 months	105	95.5	
	12 to 24 months	5	4.5	
Education	Primary school or lower	20	18.2	
	Secondary school	90	81.8	
	University or higher	0	0.0	
Employed	Yes	40	36.4	0.007
	No	70	63.6	
No. of Children	1 child	40	36.4	
	2-4 children	65	59.1	
	>=5 children	5	4.5	

TABLE 1 show that majority 62 (56.4 %) mothers were aged between 25-29 years and others are between 35-44 years and 70(63.6%) mothers are non-employed.

BREAST FEEDING EDUCATION

TABLE 2: The table below provides an overview of breastfeeding education rates in Al Dhaid Hospital.

Breast feeding Practices among mothers (n-110)		No.	%	P value
Did you receive breast feeding education from Al Dhaid hospital	Yes	110	100	
	No	0	0	
No. of antenatal educational Sessions provided by health care providers in Al Dhaid Hospital	1 session	0	0	0.64 (NS)
	2 sessions	5	4.5	
	3 sessions and more	105	95.5	
What was the learning method provided for breast-feeding education in Al Dhaid hospital?	Face to face lecture one to one lecture	20	18.2	
	Video show	10	9.1	0.011(*)

	Demonstration	20	18.2	
	All the above	60	54.5	
How can you evaluate the Knowledge of Breastfeeding that you have received?	I have learned enough about breastfeeding	90	81.8	0.002(**)
	I would like to learn more about breastfeeding	20	18.2	
Breast Feeding Education from the Al Dhaid Hospital help you and supported you to start and continue exclusive (only breastmilk) breast feeding up to 6 months	Yes	105	95.5	0.359
	No	5	4.5	
Healthcare provider explained the importance of breastfeeding after delivery	Yes	110	100	
	No	0	0	

TABLE 2 shows 110(100 %) Mothers agreed that they received a minimum of 2 educational sessions from Al Dhaid Hospital and 95.5 % agreed that the education helped them for exclusive breast feeding and learned enough about breast feeding (p value 0.002**)

BREASTFEEDING PRACTICES

TABLE 3: To measure parent's breastfeeding intentions and practices after receiving the breast-feeding education, all respondents were asked to report this information in the survey.

Breast feeding Practices among mothers (n-110)		No.	%
What type of delivery did you have?	Normal delivery	79	71.8
	Caesarean section under spinal anesthesia	25	22.7
	Caesarean section under general anesthesia	6	5.5
How soon after birth did you hold your baby (Skin to Skin contact)	Normal delivery Immediately or within 5 minutes	73	66.4
	Can't remember	37	33.6
How soon after birth did you breastfeed your baby	Normal delivery Immediately or with in 1 hour	60	54.5
	Caesarean section under spinal anesthesia - inside operating theatre after doctor examined the baby or with in 1 hour	10	9.1
	Caesarean section under general anesthesia- in recovery room or with in 1 hour	3	2.7
	Can't remember	37	33.6
What type of feed was given to your baby during hospital stay	Breastmilk Only	101	91.8
	Breastmilk & Formula	1	0.9
	Formula Only	8	7.3
What type of feed was given to your baby during first 6 months	Breastmilk Only	90	81.8
	Breastmilk & Formula	9	8.2
	Formula Only	11	10
Exclusively breastfed your baby for 6 months	Yes	90	81.8
	No	20	18.2
Length of breastfeeding your baby	0-3 Months	12	10.9
	3-6 Months	9	8.2
	6-9 Months	89	80.9

Level of BF Practice - Overall Results	mothers count	%
Poor BF Practice (needs improvement)	1	1%
Good BF Practice	24	22%
Very Good Practice	85	77%

The above results are generated compiling 7 practice questions (Q1-Q7). TABLE 3 reveals that 77 % mothers have very good breast-feeding practice after receiving breast feeding education including early initiation of breast feeding immediately or within 1-hour n=73 (66.4%). Exclusive breastfeeding given by (n-90) 81.8% of mothers after the breast-feeding education session.

TABLE 4: REASONS INDICATED BY MOTHERS WHO STOPPED BREASTFEEDING BEFORE 6 MONTHS

	Breast feeding Practices among mothers (n-110)	No.	%
Reasons for discontinuing exclusive Breast-feeding	Poor milk supply	9	8.2
	Nipple Pain	0	0
	Pregnancy	0	0
	Due to taking medications	0	0
	Had to go back to work/lack of support at work	9	8.2
	Other	92	83.6

TABLE 4 shows Only 8.2 % mothers stopped breast feeding due to poor milk supply and 8.2 % reported stopped due to work related issues.

TABLE 5: NUMBER OF CHILDREN AND BREAST-FEEDING DURATION

No. Children * Length of breastfeeding your baby Crosstabulation						
			Length of breastfeeding your baby			Total
			0-3 Months	3-6 Months	6-9 Months	
No. Children	1 child	Count	6	7	27	40
		% within No. Children	15.0%	17.5%	67.5%	100.0%
	>1	Count	6	2	62	70
		% within No. Children	8.6%	2.9%	88.6%	100.0%
Total		Count	12	9	89	110
		% within No. Children	10.9%	8.2%	80.9%	100.0%

TABLE 5 Shows parents who are having more than 1 child have more length of breast feeding (88.6%)

TABLE 6: LEARNING METHODS AND BREAST-FEEDING DURATION

What was the learning method provided for breast-feeding education in Al Dhaid hospital?		Length of breastfeeding your baby			Total
		0-3 Months	3-6 Months	6-9 Months	
Face to face lecture one to one lecture	Count	5	4	11	20
	% within What was the learning method provided for breast-feeding education in Al Dhaid hospital?	25.0%	20.0%	55.0%	100.0%
Video show	Count	0	2	8	10
	% within What was the learning method provided for breast-feeding education in Al Dhaid hospital?	0.0%	20.0%	80.0%	100.0%
Demonstration	Count	1	0	19	20
	% within What was the learning method provided for breast-feeding education in Al Dhaid hospital?	5.0%	0.0%	95.0%	100.0%
All the above	Count	6	3	51	60

	% within What was the learning method provided for breast-feeding education in Al Dhaid hospital?	10.0%	5.0%	85.0%	100.0%

TABLE 6 shows mothers who received education through all methods (Face to face lecture one to one, Video show & Demonstration) have more compliance n- 51(85 %) to exclusive breast feeding

TABLE 7: DELIVERY TYPE AND BREAST-LENGTH OF FEEDING

Delivery Type * Length of breastfeeding your baby Crosstabulation						
			Length of breastfeeding your baby			Total
			0-3 Months	3-6 Months	6-9 Months	
Delivery Type	Normal delivery	Count	5	8	66	79
		% within Delivery Type	6.3%	10.1%	83.5%	100.0%
	Caesarean section	Count	7	1	23	31
		% within Delivery Type	22.6%	3.2%	74.2%	100.0%
Total		Count	12	9	89	110
		% within Delivery Type	10.9%	8.2%	80.9%	100.0%

TABLE 7 shows mothers who delivered via normal delivery have more compliance n- 66(83.5 %) to exclusive breast feeding.

V. DISCUSSION

A cohort, quantitative study using a retrospective Medical Record Review and online survey study carried out through WhatsApp.

Description of selected Demographic Variables

Shows that majority n= 62 (56.4 %) mothers were aged between 25-29 years and n=47(42.7%) are between 35-39 years and one was aged between 40-44 years. Most of the Child ages between 6-12 months (95.5%) and remaining 4.5 % were 12- 24 months during the survey. In relation to education, n= 90(81.8%) mothers were educated up to higher secondary and n= 20(18.2%) were educated up to primary schools and none of them have Universities or higher education.70 mothers (63.6 %) are non-employed (p-Value-0.007). Regarding the number of children n=65(59.1%) mothers were having 2-4 children, n=40(36.4%) mothers have only one child and n=5 (4.5%) Mothers have more than 5 children. (Table 1)

Breast feeding education rates in Al Dhaid Hospital

In our survey, All Mothers n=110 agreed that they received two or more education sessions (p Value-0.64) from Al Dhaid Hospital and 95.5 % agreed that the education helped them for exclusive breast-feeding. 60 mothers (54.5%) received all modes of training including one to one lecture, video show and demonstration, n=20 (18.2%) attended only Face to face lecture one to one lecture, n=10 (9.1%) educated through video show and n=20 (18.2%) by demonstration (Table 2).A descriptive study conducted on women during their first 8 weeks postpartum who attended MOH clinics in Penang State, Malaysia using a self-administered questionnaire in April and May 2015, shows the exclusive breastfeeding prevalence at the time of survey was 61%. Antenatal breast-feeding education was significantly associated with exclusive breastfeeding even after adjusting for confounders (adjusted odds ratio [aOR] 8.1, 95% confidence interval 1.7, 38.3). [47]. A two-arm randomized controlled trial took place in three Midwestern hospitals in Indiana shows that by the end of the third month after supporting interventions, 84% of the intervention group was breastfeeding compared to 66% in the control group. Therefore web-based interactive breastfeeding monitoring system may be a promising intervention to improve breastfeeding duration, exclusivity, and intensity. [48].

Breastfeeding practices

The combined results of good breast-feeding practice questions reveal that n=85(77%) mothers followed very good breast-feeding practice and n=24 (22%) have good breastfeeding practice and only n=1(1%) having poor breast-feeding practice that needs improvement. Also, majority of mothers demonstrated an early initiation of breast feeding immediately or within 1-hour n=73 (66.4%) (Table 3) and exclusive breastfeeding n=90 (81.8%). A previous cross-sectional descriptive study involving women of child bearing age in Kware town of Sokoto State, Nigeria showed that breastfeeding education helped to improve breastfeeding knowledge and breastfeeding practices. Appropriate education directed at early initiation of breastfeeding, improved knowledge of EBF and use of colostrum is required to enhance EBF and duration of breastfeeding. [49]. The results of a single-blind, randomized controlled study in a prenatal clinic of a teaching hospital to assess the effectiveness of an integrated breastfeeding education program to improve self-efficacy and exclusive breastfeeding rate proves that the breastfeeding education intervention improved breastfeeding self-efficacy, infant feeding attitudes, and exclusive breast-feeding rates. IN this study the intervention group had significantly higher breastfeeding self-efficacy at 36 weeks' gestation (mean difference (MD): 7.3, $p < .001$), and postpartum at 1-week ($p < .001$), 1-

month (p < .001) and 3-months (p < .01) with MD: 6.7, 7.9, and 8.1, respectively; Rates for exclusive and predominant breastfeeding postpartum were significantly higher for the intervention group vs control (p < .02) at 1-week (98% vs. 86%), 1-month (100% vs. 90.7%), and 3-months (94% vs. 76.7%). Odds ratio (OR) postpartum for exclusive and predominant breastfeeding was greater for the intervention group at 3-months (OR = 4.7, 95% Confidence interval (CI), 1.2 -18.6; p = .05) and for exclusive breast feeding at 6-months (OR: 2.82, 95% CI 1.0–8.1; p = .05). [50].

Reasons indicated by mothers who stopped breastfeeding before 6 months

In this study report shows 8.2 % mothers stopped breast feeding due to poor milk supply and 8.2 % reported stopped due to work related issues. It may be beneficial in future studies to further explore reasons leading to non-exclusive breastfeeding indicated by mother's choice. Determining specifics such as lack of motivation or self-confidence, inconvenience, lack of support, or pain/physical barriers, etc. could help health care professionals at Al Dhaid hospital fine tune their educational program and provide individualized support for each new mother depending on her needs. (Table 4). Similar study was conducted in a community hospital in southern Taiwan also states education level, primiparity, perceived low milk quantity, and return to work are associated with premature cessation of exclusive breastfeeding in Taiwan. Strategies about health education, family support, and baby-mother friendly environment can be used to achieve higher EBF rate [51].

In a retrospective study in Iran based on questionnaires and interviews with mothers of infants up to 24 months of age, the most frequently cited reasons mothers gave for discontinuing exclusive breastfeeding were physicians' recommendation (54%) and insufficient breast milk (self-perceived or true, 28%). Breastfeeding was common after six months of age: only 11% of infants discontinued breastfeeding, at a mean of 13.8 months. The most common reason for discontinuation at this age was insufficient breast milk (self-perceived or true, 45%). Maternal illness or medication (10%), infant illness (6%), and return to work (3%) were uncommon causes. [52].

Number of children and breast-feeding duration

In this study shows Multiparous women have (20%) more exclusive breast-feeding rates (88.6%) when compared to primiparous women (67.5%). (Table 5). A cross-sectional analytical study conducted in Wajir District hospital, Wajir County, Kenya to compare knowledge, attitudes and practices on exclusive breastfeeding between primiparous and multiparous mothers. In this study data was collected through structured researcher administered questionnaires for a total of 281 mothers recruited from a maternal and child health center, also shows the rate of EBF among primiparous mothers was 39.4% and multiparous mothers 49.3% [53].A secondary analysis was conducted in Mothers with a singleton or twin pregnancy delivered at the Milton S. Hershey Medical Center in Hershey also found Multiparous women were more likely to breastfeed through 6 months (p<0.001), Multiparous mothers had a significantly longer breastfeeding duration than primiparous mothers (p<0.001) and had higher rates of breastfeeding. [54].A Comparative Cross-sectional Study on Prevalence of Exclusive Breastfeeding and Its Associated Factors among Primiparous and Multiparous Mothers in an Urban Slum, Agartala, Tripura, Northeast India shows the prevalence rate of EBF among primiparous and multiparous mothers were 53% and 68%, respectively [OR= 1.88 (1.060, 3.349) [55].

Learning methods and breast-feeding duration

Mothers who received Multimodal breast-feeding education (Face to face lecture one to one lecture, Video show & Demonstration) have slightly higher compliance n- 51(85 %) to exclusive breast feeding than who received single mode of education. (Table 6). The systematic review by Hannula examined professional support interventions for breastfeeding and found that interventions expanding from pregnancy to the intrapartum period and throughout the postnatal period were more effective than interventions concentrating on a shorter period. In addition, intervention packages using various methods of education and support from well-trained professionals were more effective than interventions concentrating on a single method [56]. In an Integrated review composed of the period between January 2000 and February 2015, the most prominent methods observed in the trials are phone calls, videos/slides, home visits, brochures/written documents/books, individual support/education, and peer counselling/support. Initiation of breastfeeding, breastfeeding duration, exclusive breastfeeding, breastfeeding rate, and knowledge level are the variants that were concentrated on the trials. It is observed that in the trials breastfeeding duration, exclusive breastfeeding, and breastfeeding rate levels are the most positive affected variants by education and support. Some interventions were also effective on breastfeeding attitude, satisfaction, and self-efficacy in some studies [57].

Delivery type and length of breast-feeding

Of the 110 medical records reviewed, n = 79 (71.8%) women delivered vaginally, and n = 31(28.2%) delivered via c-section. Women who gave birth naturally had a slightly higher (10%) success of breastfeeding their babies compared to caesarean. (Table 7). A 2021 literature review also showed a link between caesarean section and the initiation and duration of breastfeeding; compared to natural childbirth, caesarean section can negatively affect the initiation and shorten the duration of exclusive breastfeeding. [58].

Another study published in Iranian Journal of Pediatrics manifest that the rate of exclusive breastfeeding was significantly lower in the mothers delivered by cesarean section than who delivered vaginally (13.4% vs. 41.8%). The average duration of breastfeeding among the women with vaginal delivery was significantly longer than the cases with cesarean delivery (4.5±1.7 months vs. 4.0±1.5 months). The rate of the onset of breastfeeding in the first hour of delivery was significantly higher among the group with vaginal delivery than the group with cesarean one (82 % vs. 38 %) and finally the rate of formula feeding among the infants of the mother with cesarean section was higher than the infants of the mothers with vaginal delivery (33% vs. 22%). [59].

VI. LIMITATIONS

This study has some limitations that must be considered when interpreting the result. First, this was a study done was conducted in a single community hospital in Al Dhaid which may limit the generalizability of the results to other populations and settings.

Surveys could not be distributed in-person and could only be accessed via the internet. This may have limited participation, especially among individuals who lack internet access. In this study sample selection was not randomized. But our study evidences show that breast feeding education using multiple strategies will increase the rate of exclusive breast feeding and early breast-feeding initiation. however, the educational strategies need to be explored further.

VII. Conclusion

The study revealed that breast feeding education using multiple strategies will increase the rate of exclusive breast feeding and result in the best feeding practices including early breastfeeding initiation. In this study also finds Multiparous women have more exclusive breast-feeding rates when compared to primiparous women. Poor milk supply and work-related issues are main reasons for the cessation of breastfeeding. Also, majority of mothers who received breast feeding education reported an early initiation of breast feeding immediately or within 1-hour.

VIII. Acknowledgment

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IX. CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in writing this article. Author's contribution All authors have contributed to this research article.

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