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RESEARCH ARTICLE

KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING BREASTFEEDING AMONG FEMALE SCHOOL TEACHERS AT QASSIM REGION.

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Abstract

Background: Breastfeeding is the ideal way of feeding infants, which has a great impact on them, their mothers, their health care costs and the whole society. It has many benefits for both the mother and the infant. The WHO recommends exclusive breastfeeding for up to 6 months of age, and to continue breastfeeding for two years or longer with proper complementary nourishments. Despite its benefits, breastfeeding rates and duration vary among countries and regions and the pattern have changed the changing community of Saudi Arabia. There are limited data regarding breastfeeding among female schoolteachers in Saudi Arabia. This study aimed to assess breastfeeding knowledge, attitude and practice of female schoolteachers in Qassim region, Saudi Arabia and to identify factors that affect breastfeeding knowledge, attitude and practice among them.

Methods: A cross-sectional study using a questionnaire was conducted among female schoolteachers Qassim Region, Saudi Arabia. Breastfeeding knowledge, attitude and practice of participants who had at least one child aged five years or younger at the time of the study was assessed with emphasis on their experience with the last child.

Results: A total of 526 women had an age range of 22 to 49 years. About 211 (41.2%) women started breastfeeding their newborns after the first day while 124 (24.2%) start feeding within half an hour after delivery. Child health was the main motivation for breastfeeding among 441 (83.8 %) of the respondents. Exclusive breastfeeding up to 6 months was reported in only 14 (3%) of the participants. The main cause of early cessation of breastfeeding was insufficient breast milk, which was reported by 344 (65.4%) of participants followed by work related reasons.

Conclusion: Although teacher mothers knew well about importance of breastfeeding to the child health, exclusive breastfeeding rate is very low. The most common cause of the early cessation of breastfeeding and early introduction of artificial milk was breast milk insufficiency. This is mostly due to inappropriate breastfeeding techniques and practices. Physicians and health care workers should emphasize the importance of exclusive breastfeeding and should

explain the right techniques and practices of breastfeeding during pregnancy and early after delivery.

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Introduction:-

Breastfeeding is the ideal way of feeding infants, which has a great impact on them, their mothers, their health care costs and the whole society (1). The WHO recommends exclusive breastfeeding for up to 6 months of age, and to continue breastfeeding for two years or longer with proper complementary nourishments (2).

Breastfeeding makes a significant emotional relationship and connections between the mother and her infant (3). It also has nutritional, developmental, immunological, and environmental benefits to the infant (4). The risk of some diseases like gastroenteritis, necrotizing enterocolitis, otitis media, respiratory infections, sudden infant death syndrome, obesity, and hypertension can be reduced by breastfeeding (5).

Numerous benefits for the breastfeeding mothers are well known in addition to those of the infant. Exclusive breastfeeding is more likely to cause amenorrhea, which conserves iron stores and reduces the risk of iron deficiency in the first 6 months postpartum (6). Extended breastfeeding has a suppressive effect on ovulation that delays the menstrual cycle and hence increases the duration between pregnancies (6). Breastfeeding mothers are less likely to have some types of cancers (7), especially breast and ovarian cancers (8). They have more weight and fat reduction compared to non-breastfeeding ones in short duration. As well, exclusive breastfeeding more than 6 months can cause more weight loss (9).

There are many variables affecting breastfeeding which includes; ethnicity, mother age and her education level, mother work, method of delivery, family support, weight gain and insufficient milk (10).

Despite all these benefits of breastfeeding, its prevalence and duration are lower than the recommendations in many countries (11). However there are rates variations from country to another. For example, in United Kingdom the rates of exclusive breastfeeding are increasing (12), while in United State the rates are stationary and low (13). In the Arabic countries there is a decline in the breastfeeding rate (14). In communities with rapid transition like Saudi Arabia the patterns of breastfeeding have changed (15), the rate was 31% in 2006 with continuing decrease (16). Progressive decrease in breastfeeding practice and duration was reported in Saudi Arabia (17). In addition early initiation of bottle-feeding and earlier introduction of solid foods was recorded (18).

Data on breastfeeding and factors affecting it attitudes were reported from different areas of Saudi Arabia (19). In a study done in Southwestern region of Saudi Arabia among female Saudi teachers the rate of exclusive breastfeeding for 6 months was found to be 8.3% (20). Female schoolteachers in Saudi Arabia represented half of the workforce and they will have a great effect on next generations (21).

The WHO definition of breastfeeding was that it is the way of providing infants with the nutrients and supplements they need for a proper health growth and development (22).

There are limited data regarding breastfeeding among female schoolteachers in Saudi Arabia. Furthermore no study was done in Qassim region about Knowledge, attitudes and practices of breastfeeding among female schoolteachers.

Our study aimed to assess breastfeeding knowledge, attitude and practice of female schoolteachers in Qassim region, Saudi Arabia and to identify factors that affect their knowledge, attitude and practice.

Subjects and Methods:-

This observational cross-sectional study was conducted among elementary, intermediate and secondary schoolteachers in the major cities of Qassim region, Middle of Saudi Arabia. The population of this study was 10127 female teachers from primary, middle and high school teaching almost 82736 students at 697 schools at Qassim region.

Female schoolteachers who had at least one child 5 years or younger at the time of the study were included while other school workers like administrative staff were excluded.

The two-stage cluster sampling method was used. Primary sampling units were selected randomly from all the cities of Qassim. The cities were numbered and a computer-based random number generator was used to select target cities. In the Secondary sampling units female schools were numbered and a computer-based random number generator was used to select the schools from each city. It was anticipated that less than 20% of nursing mothers in the study population were exclusively breastfeeding. With an absolute precision of 5% at 95% confidence interval, the minimum sample size required for the study was calculated to be 492 mothers [23].

The questionnaires were distributed to 500 schoolteacher mothers in order to achieve a target of at least 492 participants.

A self-administered questionnaire was used to collect the data. The questionnaire was translated in Arabic. This questionnaire was adapted from the one used by Al-Binali (20). As well as the demographic and biological data, the questionnaire included questions addressing knowledge (importance of colostrum, the average number of feeds the child should receive per day, up to what age the child should receive only breast milk and what age the mother should start supplementary food), attitude (reasons for adopting breastfeeding, reasons for stopping breastfeeding, intention to breastfeed future children, intention to participate in classes related to breastfeeding in future pregnancy and the participant self-image) and practice (time of commencement of breastfeeding after delivery, duration of breastfeeding, difficulties in initiating breastfeeding, age of starting formula, age at which breastfeeding was stopped and attending classes related to breastfeeding during pregnancy). The questionnaire was initially validated through a pilot testing prior to administration.

Data were summarized and organized using SPSS software. Descriptive statistics was calculated including central tendency, the mean, and variability as indicated by measures of variance and standard deviation for continuous variables.

An informed consent was signed by all participants who were completely free whether to join the study or not and they had the right to withdraw from the study at any time without explaining the causes.

In this study the following definitions were used. Breastfeeding is the normal way of providing young infants with the nutrients they need for healthy growth and development. Colostrum is yellowish, sticky breast milk produced at the time before delivery. Exclusive breastfeeding: breast milk only, excluding water, other liquids, and solid foods (1).

Results:-

A total of 526 respondents was selected for this study. The mean \pm SD age of the interviewers was 35 \pm 5.64 years with a range of 22-49 years. The majority of the respondent's educational level was University and teacher institutions among others. The school type of the majority of the respondent's was public. The remaining information about the characteristics of the members appears in Table 1.

Table 1:- schoolteachers demographic characteristic (N=526)

Variables		
Age (Mean \pm SD), range	(35 \pm 5.64), 22 to 49 y	
Teacher Educational level	Frequency	(%)
Teacher institution	18	3.5
High school "Tahfeedh"	2	0.4
University	439	84.7
Other	59	11.4
School System		
Primary	179	34.2
Intermediate	80	15.3
High School	264	50.5
Husband Education		
Primary	25	4.9
Intermediate	32	6.2
High School	121	23.5
University	337	65.4
Husband job:		

Unemployed	45	8.7
Employed	471	91.3
Living alone with husband:	505	96.6
Number of Family members living together	6 ± 2 Min. 0 and Max. 12	
Do you have housemaid:		
Yes	308	58.7
No	217	41.3
Type of Accommodation:		
Apartment	82	15.7
Floor	121	23.2
Villa	319	61.1
How do you see yourself in regards to weight and shape?		
Thin	25	4.8
Normal	299	57.2
Somewhat Obese	174	33.3
Obese	25	4.8
Type of Delivery for the Last Child:		
Normal	361	70.8
Cesarean Section	149	29.2
Did you have follow-up during the last pregnancy?		
Yes	496	97.4
No	13	2.6
What is the gender of the youngest?		
Male	254	49.0
Female	261	50.4
Twin "male and female"	3	0.6
Mean age of the youngest child	3.018 ± 2.3983	
Median age of the youngest child	3	

Table 2 shows responding to frequency of breastfeeding, giving colostrum, artificial milk, the time of receiving breast milk with or without additive, and when to stop breast milk completely. The majority used to breastfeed as needed per day, and agree to provide colostrum after delivery. More information about the respondents' knowledge can be sought in the table.

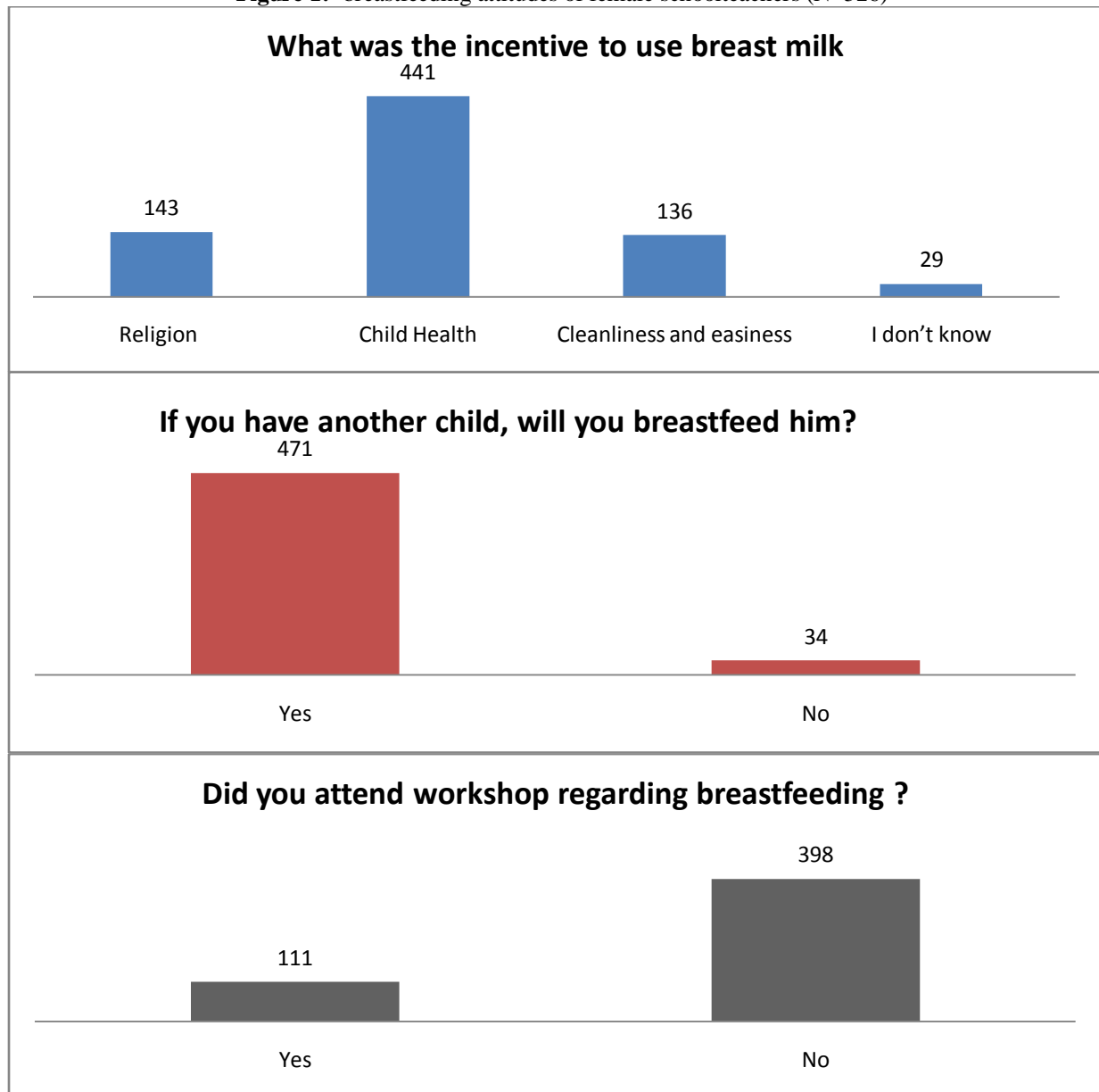
Table 2:- schoolteachers' breastfeeding knowledge (N=526)

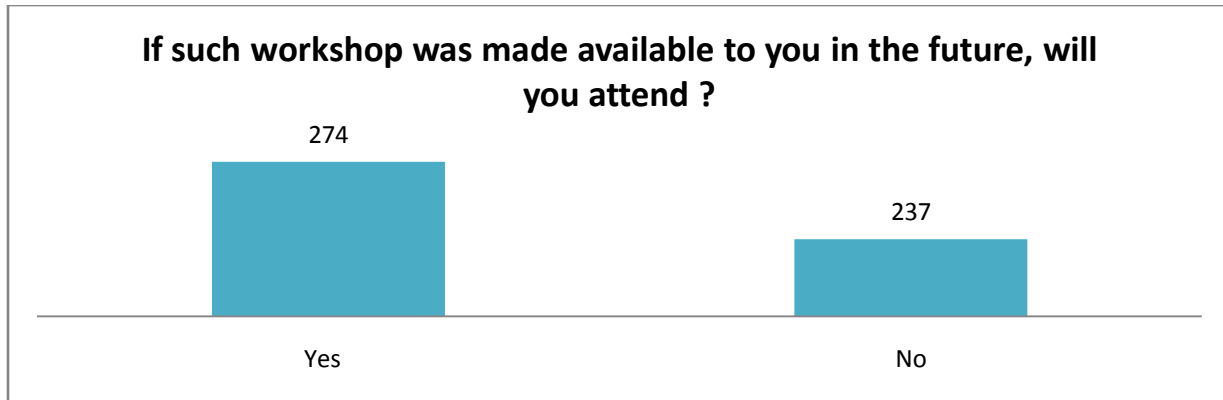
Variables	Frequency	(%)
Frequency of breastfeed baby per day		
8 times	131	25.8
> 8times	90	17.7
As needed	270	53.1
I don't know	17	3.3
Opinion about giving Colostrum after delivery of the baby		
Good	445	85.9
Not Good	14	2.7
I don't know	59	11.4
For how long should the baby breastfeed only without additives		
1 months	57	11.4
2 months	22	4.4
4 months	22	4.4
6 months	128	25.5
8 months	10	2.0
12 months	110	22.0
24 months	105	21.0
For how long should receive breast milk plus additive		
4 months	40	8

6 months	181	36
8 months	29	5.8
12 months	83	16.5
24 months	102	20.3

Information on schoolteachers’ attitude towards breastfeeding incentive to practice, breastfeeding another successive child, and attendance of workshop regarding breastfeeding are summarized in figure1. Commencement of breastfeeding after delivery was noticed to be late in this cohort because most of respondents {416 (80.0%)} reported giving readymade formula to their babies despite the fact that the majority {267 (51.4)} hadn’t face difficulties in initiating breastfeeding. Almost all respondents gave formula milk to their babies at a young age in correlation with cessation of breastfeeding in most of case due to insufficient breast milk (Table-3).

Figure 1:- breastfeeding attitudes of female schoolteachers (N=526)



**Table 3:-** Breastfeeding practice by female schoolteachers

Variables	Number	(%)
When did you start breastfeeding?		
½ hour after delivery	124	24.2
Within 6 hours	78	15.2
More than 6 hrs but within 24hours	96	18.8
After the first day	211	41.2
Did your child receive ready-made formula milk while in the hospital?		
Yes	416	80.8
No	99	19.2
Do you face difficulty in breastfeeding?		
Yes	252	48.6
No	267	51.4
Did you give artificial milk?		
Yes	475	91.9
No	40	7.7
Baby age start artificial milk:		
1 months	162	35.1
2 months	58	12.6
3 months	53	11.5
4 months	37	8.0
6 months	14	3.0
12 months	24	5.2
24 months	9	1.9
Age at which breast milk stopped completely:		
1 months	61	12.4
2 months	61	12.4
3 months	49	10.0
4 months	51	10.4
6 months	63	12.8
12 months	51	10.4
24 months	39	7.9
If you stop breastfeeding before 2 years, what was the reason behind that?		
Insufficient milk	344	65.4
Child refusal	121	23.0
Breast health problem	36	6.8
Breastfeeding affects my shape	9	1.7
Health problem	75	14.3
Work related	238	45.2

A one-way ANOVA was used to identify the effects of the independent variables: duration of breastfeeding with or without additives, age of cessation of breast-feeding and age of commencement of artificial milk on educational level (university versus institute) as an independent variable. There was a significant effect of the age of infant at which breastfeeding was stopped on educational level ($F=5.25$, $p=0.001$) as institutes graduates were tended to stop breastfeeding earlier than university graduates. All other factors were not significant effectors on educational level namely duration of breast-feeding without additives ($F=1.61$, $p=0.186$), duration with additive ($F=0.24$, $p=0.869$) and infant age at the start of artificial milk ($F=0.591$, $p=0.621$).

Teacher mother's level of education was not significantly associated with follow-up during the last pregnancy ($\chi^2=2.296$, $p=0.513$) and as well not with females' interest in the future available workshops ($\chi^2=7.071$, $p=0.070$).

Discussion:-

In this study the majority of breastfeeding schoolteachers breastfeed their babies as needed. Most of them had good knowledge of colostrum and duration of breastfeeding with or without additives and their attitude towards breastfeeding is acceptable. However, breastfeeding was late to initiate instead artificial feeding was noticed despite good knowledge of breastfeeding benefits.

A study reported from Jeddah demonstrated that 56% of mothers had received breastfeeding instructions, generally by relatives [24] compared to this study, where 57.8% of breastfeeding mothers had knowledge about the importance of breastfeeding from a doctor during antenatal care visits.

WHO recommends that all mother to breastfeed their babies within half an hour after delivery [25]. In this study only 124 (24.2%) of mothers start breastfeeding within half an hour, comparable to 31% breastfed their babies within ½ an hour in a study from Abha, Saudi Arabia [20].

The majority of the mothers believed that the primary incentive to practice breastfeeding was the child health while 27.2% were motivated by religion. This result was different from that reported from Abha, Saudi Arabia where 56.6% of mothers believed that the most important reason for initiating breastfeeding was their Islamic religious background [20].

The knowledge rate of exclusive breastfeeding for at least 6 months among mothers in this study, (25.5%) was a little higher than the 22.0% rate in central Saudi Arabia [26]. Actually, in this study only 3% continued exclusive breastfeeding for up to 6 months lower than the 8.3% rate in Abha population [20].

Most of the participants in this study started artificial milk within the first month and approximately 53.1% of them breastfeed their baby as needed per day. These figures are lower than the rate in a study done among female health care workers in tertiary care hospitals [27]. The most common reason for stoppage of breastfeeding, in this study, was insufficient breast milk. This was similar to the most common reason in a systemic review in Saudi Arabia but different from a study done in Hail [28, 29] in which the main reason was mother's work.

The majority of breastfeeding teachers (91.1%) used artificial milk to feed their babies during the first two years. This rate was higher than the 76.2% among health care workers in tertiary care hospitals [28]. The rate of ready-made formula milk feeding (80.2%) while in the hospital was higher than the 66.7% rate in Abha study [20].

The rate of intention of breastfeeding future children (93.3%), was more than the 84% rate in another study from Saudi Arabia [30].

Goodness of Colostrum to the infant was appreciated by 85.9% of participants in this study comparable to 89.3% reported among Abha population [20].

Almost 398 (77.9%) of participants didn't attend workshops regarding breastfeeding, 57.8 % obtained their knowledge about the importance of breastfeeding during antenatal care visits. These rates might contribute to the low rate of exclusive breastfeeding for 6 months, and to the high rate of initiation of artificial milk feeding during the first month of life.

Conclusion:-

Although teacher mothers knew well about importance of breastfeeding to the child health, exclusive breastfeeding rate is very low. The most common cause of the early cessation of breastfeeding and early introduction of artificial milk was breast milk insufficiency. This is mostly due to inappropriate breastfeeding techniques and practices. Physicians and health care workers should emphasize the importance of exclusive breastfeeding and should explain the right techniques and practices of breastfeeding during pregnancy and early after delivery.

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