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Relation between time of introducing pacifiers for infants and patterns of breastfeeding among their mothers

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Abstract

Pacifiers are often believed to be harmless or even necessary and beneficial for infants' development. This study aimed to investigate the relation between introducing pacifiers for infants and patterns of breastfeeding among their mothers. A retrospective research design was used in a pediatric medical unit at Minia University Hospital for obstetrics and pediatrics. A purposeful sample of 152 mothers admitted to the pediatric medical unit at Minia University Hospital for obstetrics and pediatrics with their infants. The structured interview questionnaire consisted of three parts. Results: the studied mothers who introduced her infant pacifier in the 1st month of life, near to half of the mothers their children initiated breastfeeding after three days of life, more than one-third of them feed according to their demand and near to half of the children don't follow exclusive breastfeeding life with statistical significance differences. So, this study concluded that introducing a pacifier to an infant can lead to interrupted exclusive breastfeeding. This study recommended that encourage exclusive breastfeeding and counsel mothers on the use and risks of feeding bottles, teats, and pacifiers.

Keywords: Breastfeeding, infants, pacifier, patterns

1. Introduction

Breastfeeding is an ideal method of baby feeding, as long as it is helpful to the infant. The American Academy of Pediatrics ^[1] advocates exclusive breastfeeding for the first six months of a newborn's life. As is clear from World Health Organization recommendations, exclusive breastfeeding for newborn infants is an essential feature of newborn care. Infants breastfed solely for six months and experienced fewer viral episodes such as acute respiratory illness, acute otitis media, and gastroenteritis than their partly breastfed or non-breastfed counterparts ^[2].

Hossain, Islam, Kamarul & Hossain ^[3] pointed that World Health Organization's (WHO) guideline is indicated that exclusive breastfeeding (EBF) should be followed before the sixth month of the infant's life because it reduces child mortality and encourages short and long-term quality of life, making recognizing modifiable risk factors for loss of EBF a high priority.

Sucking is an important milestone for any baby, and it starts in the twentieth week of pregnancy. It is essential to develop feeding from the mother's breast, sucking thumbs, hands, or sucking a pacifier. Pacifiers are often believed to be harmless or even necessary and beneficial for infants' development ^[4].

As a way of calming and stimulating the infant, relieving discomfort by acting as an analgesic, and fulfilling the inherent non-nutritive suckling (NNS) reflex of the baby, the use of pacifiers is every day in different cultures. In addition, a meta-analysis has found that pacifiers have a positive effect on shortening the length of hospital stay of preterm babies. In an attempt to minimize the risk of sudden infant death syndrome (SIDS), pacifiers were also involved (SIDS) ^[5].

While it is not fully known the specific mechanism by which they do this, it is proposed that the use of pacifiers can improve the patentability of the airways during sleep, prevent the infant from rolling into a prone position, encourage cardiovascular stability, and improve autonomic regulation of breathing. Pacifiers are often commonly used to console screaming infants, enhance the well-being of parents and babies, and avoid the sucking of thumbs or fingers. A widely expanded method is the use of pacifiers to satisfy the sucking reflex. Digits, pacifiers, or toys may mainly help to fulfill instinctive needs ^[6].

In addition to their advantages, pacifiers often have negative associations that have hindered

their use. These include raising the risk of otitis media development, potential breastfeeding disturbance, and the development of confusion of the nipples and malocclusion of the teeth in certain instances. It has been proposed that otitis media by Eustachian tube dysfunction and the reflux of nasopharyngeal secretions into the middle ear may be caused by pacifier use [7].

Due to the harmful effect on breastfeeding and children's well-being, the World Health Organization (WHO) and the American Academy of Pediatrics (AAP) have condemned pacifier use. Occlusal growth can be affected depending on the severity, duration, and length of pacifier use. Usage of a pacifier over two years of age will lead to malformation of the jaw and dental arch [8].

The Task Force on Sudden Infant Death Syndrome [9] of the American Academy of Pediatrics cites clear support for a calming impact on eliminating SIDS when pacifiers are used at bedtime and nap time. The specific mechanism involved in SIDS defense is not understood. Nevertheless, pacifiers should be periodically washed and removed. The priority should be on encouraging the child to monitor the speed, duration, and cessation of feeding instead of allowing the pacifier (or something else) to become the object of the activity. Pacifier use has been found to produce an analgesic effect during traumatic treatments in neonates.

2. Significance of the study

To enhance infant well-being internationally, it is essential to recognize modifiable risk factors for exclusive breastfeeding (EBF) disruption. Pacifier use has been speculated to be a risk factor for short EBF periods and needs to be researched in-depth as it is responsible for developing a widely prevalent non-nutritive sucking habit in low, middle, and high-income countries scattered across the globe for an extended period [10].

Pacifiers can lead to breastfeeding, dental problems, and an increased risk of middle ear infections, speech problems, trouble swallowing, dependence, and adverse social effects. Children who wear a pacifier appear to wean sooner than those who do not wean [6].

The WHO firmly discourages its use based on the belief that pacifier use impairs the establishment and continuity of EBF. Indeed, avoidance of pacifier use is part of 1 of the Ten Effective Breastfeeding Measures that form the foundation of the Baby-Friendly Hospital Program of the United Nations International Children's Emergency Fund/WHO. While there is some evidence that decreasing the use of pacifiers will increase EBF rates and reduce children's mortality and morbidity [11].

3. Operational definition

The breastfeeding pattern is defined as the initiation of breastfeeding, scheduled or demand feeding, exclusive or nonexclusive, and offering bottle feeding to the infants.

4. Aim of the study: to

Investigate relation between time of introducing pacifiers for infants and patterns of breastfeeding among their mothers.

5. Research questions

1. When mothers introduce a pacifier to infants?
2. What are the reasons for using the pacifier from the mother's opinion?

3. When mothers initiate breastfeeding for their infants?
4. What are patterns of breastfeeding among mothers?
5. Is there a relation between time of introducing pacifiers for infants and patterns of breastfeeding among mothers?

6. Subjects and method

6.1 Research design

A retrospective research design was used to achieve the aim of the current study.

6.2 Sample

The study was conducted using a purposeful sample of 152 mothers admitted to the pediatric medical unit at Minia University Hospital for obstetrics and pediatrics (MUHOP) with their infants. The determination of the size of the sample-based upon all mothers administered their infant pacifier for six months of data collection.

Inclusion Criteria:

- Mothers used pacifiers for their infants.

6.3 Setting

The current study was conducted in the pediatric medical unit on the fourth floor at MUHOP. It receives children from all over the Minia governorate who complained about different diseases, and the total number of beds in the hospital is 200 beds. The pediatric medical unit involves rooms for intermediate care, intensive care unit, isolation rooms, children's playroom, examination room, nursing station, head nurse's office, and physicians' office, including 50 beds.

6.4 Data collection tool

Structured interview questionnaire: the researchers developed it after an extensive review of related literature and the experts' consultation in pediatric nursing. The questionnaire was in English language and composed of 12 questions. Data collection tool consisting of three parts were as the following:

Part I: Personal data of the mother: included five items about mothers such as age, educational level, residence, and occupation.

Part II: Breastfeeding pattern: It contained four items regarding initiation of breastfeeding, scheduled or demand feeding, exclusive or nonexclusive, and offering bottle feeding to the infants

Part III: Time of introducing a pacifier to the infant, Mothers' opinions about using a pacifier (12 reasons) and long-term effects of pacifier uses to infants from the mothers' views.

6.5 Ethical consideration

Written approval was obtained from the Research Ethical Committee at the Faculty of Nursing, Minia University. Official permission was obtained from the director of MUHOP. Each mother was informed about nature, the purpose of the study and its benefits. Informed written consent was obtained from mothers who met the selection criteria and accepted to be included in the study. The researchers emphasized that mothers' participation in the study was voluntary, and there was a possibility to withdraw at any time without repercussions and any effect on their

children’s care. Confidentiality was also assured through coding the data. Each assessment sheet was coded anonymously.

6.6 Validity

Three specialists associated with the Faculty of Nursing, Minia, and Cairo Universities at the Pediatric Nursing Department investigated the data collection tool's face validity. Content coverage, clarification, importance, applicability, text, volume, style and general appearance were analyzed in the method. The committee members had first proposed their opinions and recommendations. Afterward, to change the views and recommendations to be more accurate and reliable.

6.7 Pilot study

One in fifteen mothers were randomly chosen for the study. The findings of the pilot analysis were positive. The instruments were finished without problems. Mothers were working in this research.

6.8 Reliability

Internal accuracy was calculated to identify the degree to which the objects measure the same definition. Instrument reliability is to be enhanced by combining similar problems in a questionnaire. These studies provided Cronbach's alpha of 0.72 and 0.74 for the tests breastfeeding pattern and mothers' opinion, respectively.

6.9 Data collection procedure

Official permissions from the directors of MUHOP and the pediatric medical unit were obtained. Mothers who met the requirements were entered into the sample. The explanation and the type of research were explained to the mothers separately. Formal written consent was obtained from each mother to get her acceptance and gain her cooperation. The researchers for each mother discussed clear and simple explanations about the aim and nature of the study. The interview was conducted for all mothers to fill in the personal data and to assess their opinion and reasons for pacifier uses on an individual basis. The interview took place in the inpatient rooms of the interview conducted for all mothers to fill the personal data and to assess their opinion and reasons for pacifier uses on an individual basis.

The pediatric medical unit at MUHOP. The time taken to fill the structured interview questionnaire for each mother was ranged from 25 to 30 minutes and at the rate of 5 to 7 mothers/week. Data collection was conducted over six months extending from January 2019 till June 2019.

6.10 Statistical analysis

The statistical software was used to document and tabulate the results (IBM SPSS 25.0). Descriptive statistics is made up of mean and standard deviation. Quantitative data presented as a number and percentages. Chi-square was used for qualitative data to detect the relation between mothers’ opinions based on their selected personal variables. Level of significance at $p < 0.05$, 0.001 were used as the cut of value for statistical significance.

7. Results

Table 1: Percentage distribution of the studied mothers according to their demographic data (n = 152)

Demographic data	No.	%
Mother’s age/years		
20-	45	29.6
25-	76	50.0
30-	24	15.8
35 to 40	7	4.6
Mean ± SD	26.4 ± 4.2 year	
Educational levels		
Illiterate	55	36.2
Basic education	25	16.4
Diploma education	69	45.4
University education	3	2.0
Residence		
Urban	31	20.4
Rural	121	79.6
Occupation		
Governmental work	11	7.2
Private work	13	8.6
Housewife	128	84.2

Table (1): showed that 45.4% of the studied mothers have diploma educational level, 79.6% of them are living in the rural areas, most of the mothers 84.2% were housewives, and more than half of the studied mothers, 55.3% had low income.

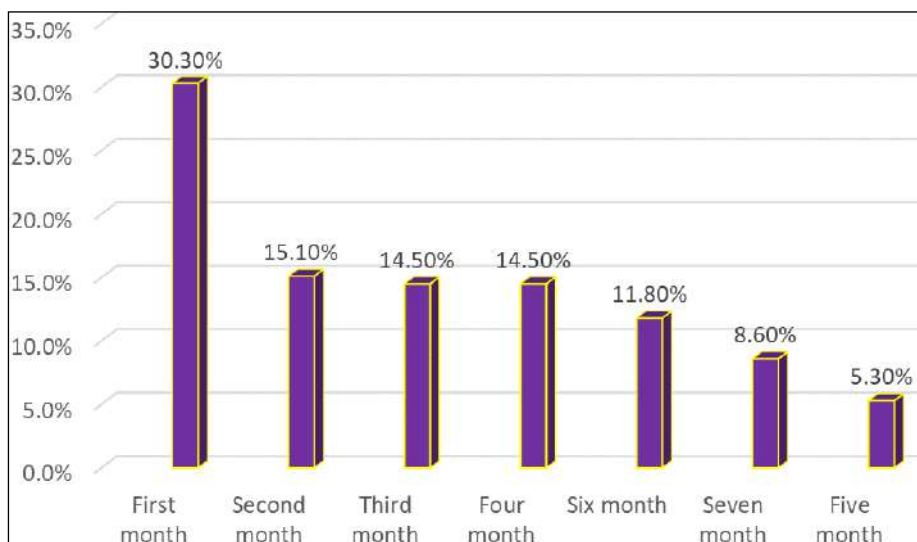


Fig 1: Percentage distribution regarding the time of introducing pacifiers to infants by their mothers (n = 152)

Figure (1): illustrated that 30.0% of the studied mothers were introduced pacifier to their infants before the ending of the first months of life, 15.1% of them introduced it at the 2nd month and the minority of them at 5th and 7th month.

Table 2: Percentage distribution of mothers' Breastfeeding Pattern (n = 152)

Items	No.	%
Initiation of breastfeeding for the infant		
In the first hour of life	23	15.1
On the first day of life	108	71.1
After three days of birth	21	13.8
Feeding the infant based on		
Baby demands	113	74.3
Schedule every three hours	19	12.5
During the day time, only	20	13.2
Mothers offered exclusive breastfeeding		
Yes	114	75.0
No	38	25.0
If yes (n=114)		
Until four months	13	8.6
Six months	101	66.4

Table (2): Presented that 15.1% of the studied mothers initiated breastfeeding for their infants in the first hour of life, 74.3% and 75.0% of them responded that they offer to breastfeed according to the baby's demand and to feed them exclusive breastfeeding, respectively and 66.4% of infant received exclusive breastfeeding until six months.

Table 3: Percentage distribution of infant received bottle feeding (n = 152)

Items	No.	%
Infants received bottle-feeding		
Yes	70	46.1
No	82	53.9
If yes, time of introducing bottle feeding to infants (n = 70)		
At birth	12	7.9
1 st month	8	5.3
2 nd month	13	8.6
3 rd month	5	3.3
4 th month	8	5.3
5 th month	4	2.6
6 th month	16	10.5
7 th month	4	2.6
Number of bottle feeds providing to infants/day as responded by their mothers (n =70)		
One	1	.7
Two	1	.7
Three	9	5.9
More than three	59	38.8

Regarding bottle feeding, table (3) showed that 53.9% of the studied mothers don't feed their infants by a bottle while 46.1% of them provide their infants by the bottle. 10.5% of mothers responded that they introduced bottle feeding at the 6th months of infant's life and 38.8% of infants received feeding by bottle more than three feeds per day.

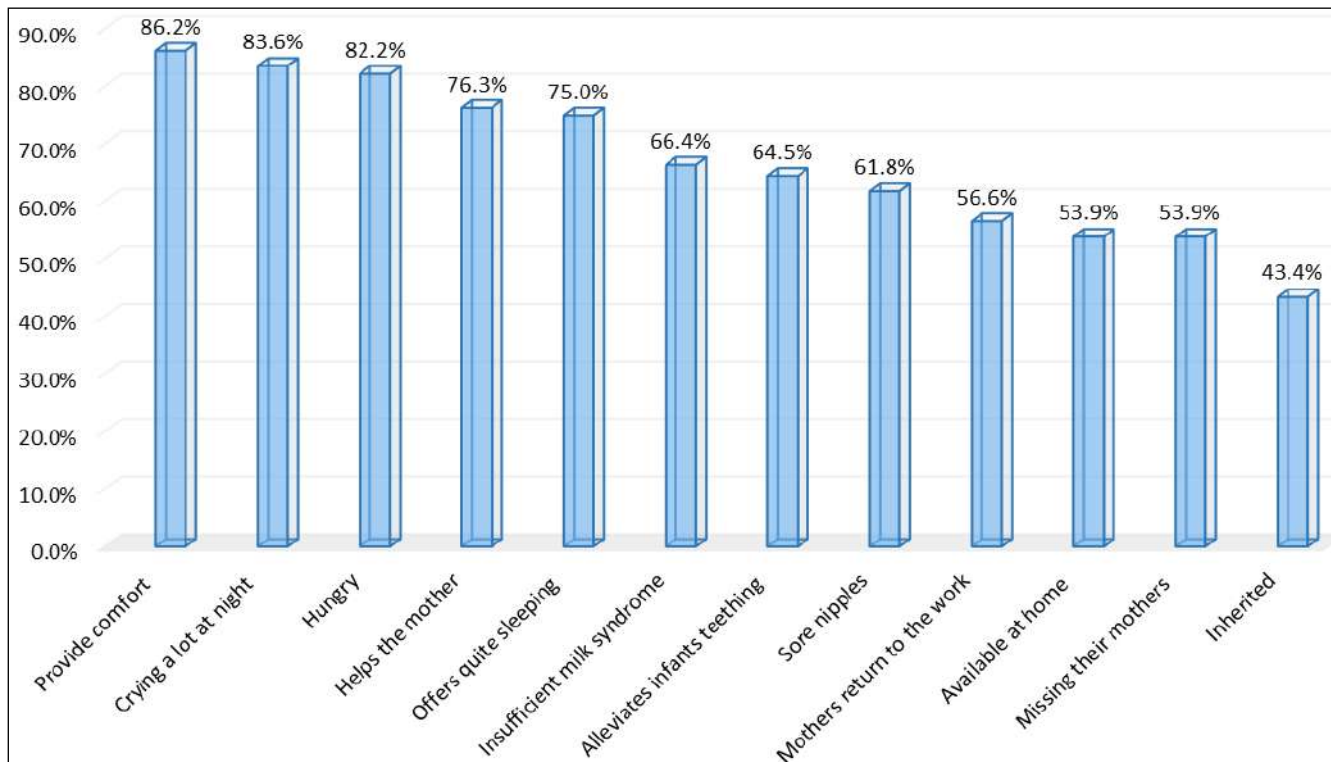


Fig 2: Percentage distribution of Mothers' opinions about reasons for using a pacifier to their infants (n = 152)

Figure (2): illustrated that most of the studied mothers, 86.2% responded that pacifiers are providing comfort for infants during the stressful episodes, followed by 83.6% of them their opinions were infants crying a lot at night, then 82.2% of them their views were due to infants' hungry. Three-quarter of the studied mothers mentioned that pacifier offers quite sleeping and calms for infants, two-third of

them their reasons were they used in case of insufficient milk syndrome, mastitis or abnormalities of the breast or the nipple and more than half of them their reasons were the pacifier alleviates infants teething discomfort, In case of sore nipples, mothers return to work, It is always available at home and when infants are missing their mothers or closing to their relatives.

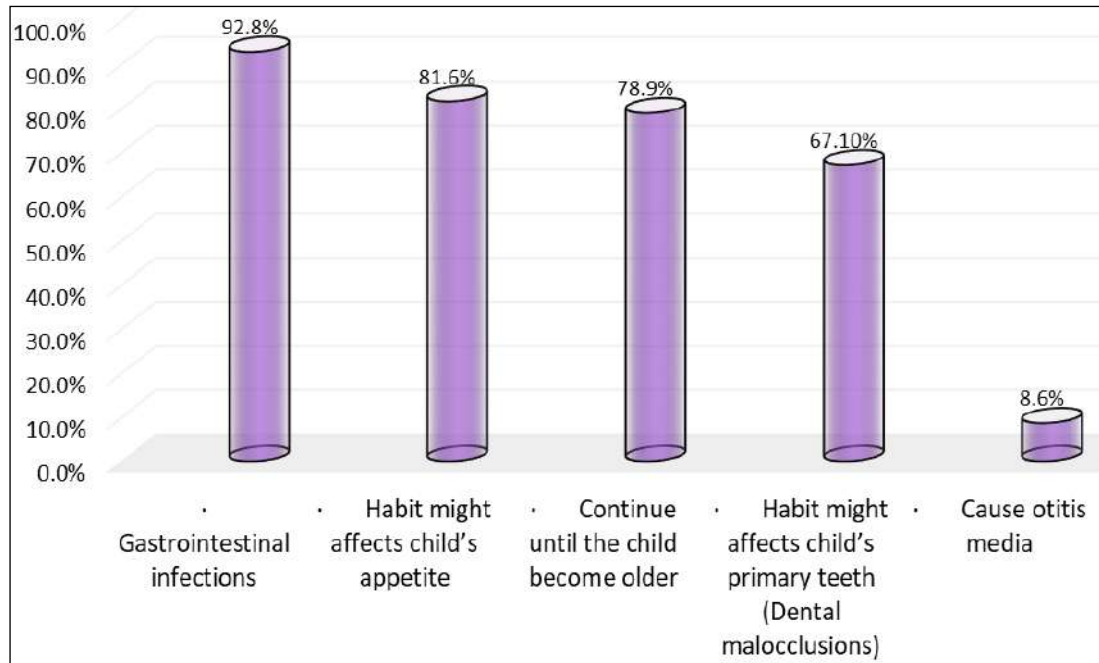


Fig 3: Percentage distribution of long-term effects of pacifier uses to infants from the mothers' opinions (n = 152)

Figure (3): demonstrated that, majority of the studied mothers, 92.8% of responded that the most common long term effects of pacifier uses are gastrointestinal infection (as diarrhea and gastritis), followed by 81.6% of them stated that the long term effects of pacifier use affected on child

appetite, then 78.9% of them said that this habit would continue until the child become older while 67.1% of them know that long term effects of pacifier use are the malocclusions in the primary teeth.

Table 5: Relation between breastfeeding patterns among mothers and time of introducing the pacifiers to their infants

Items	Time of introducing the pacifier							X ²	P-value
	1 st month (n= 46)	2 nd month (n= 23)	3 rd month (n= 22)	4 th month (n= 22)	5 th month (n=8)	6 th month (n=18)	7 th month (n= 13)		
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)		
Initiation of breastfeeding for the infant									
In the first hour of life (n= 23)	3(13.0)	6(26.1)	5(21.7)	4(17.4)	0(0)	0(0)	5(21.7)	20.344	.05*
On the first day of life (n= 108)	33(30.6)	15(13.9)	14(13.0)	15(13.9)	8(7.4)	16(14.8)	7(6.5)		
After three days life (n = 21)	10(47.6)	2(9.5)	3(14.3)	3(14.3)	0(0)	2(9.5)	1(4.8)		
Feeding the infant based on									
Baby's demands (n = 113)	35 (31.0)	15(13.3)	13(11.5)	15(13.3)	4(3.5)	18(15.9)	13(11.5)	28.043	.005**
Schedule every three hours (n= 19)	7 (36.8)	3(15.8)	6(31.6)	3(15.8)	0(0)	0(0)	0(0)		
During the day time (n = 20)	4(20.0)	5(25.0)	3(15.0)	4(20.0)	4(20.0)	0(0)	0(0)		
Mothers offered exclusive breastfeeding to their infants									
Yes (n= 114)	29(25.4)	19(16.7)	14(12.3)	19(16.7)	8(7.0)	14(12.3)	11(9.6)	10.629	.05*
No (n = 38)	17(44.7)	4(10.5)	8(21.1)	3(7.9)	0(0)	4(10.5)	2(5.3)		
Mothers offered bottle feeding to their infants									
Yes (n=70)	21(30.0)	11(15.7)	13(18.6)	9(12.9)	4(5.7)	7(10.0)	5(7.1)	2.495	.869
No (n= 82)	25(30.5)	12(14.6)	9(11.0)	13(15.9)	4(4.9)	11(13.4)	8(9.8)		

*Statistical significance at ≤ .05.

***statistical significance at ≤ .01.

Table (5): revealed that 13% and 26.1% of mothers who initiated breastfeeding in the first hour of delivery introduced pacifiers to their infants in the 1st and the 2nd month of life, respectively, while 47.6% of mothers who initiated breastfeeding after three days of birth introduced pacifier to their infants in the first month of life with statistically significant difference (P-value ≤ 0.05). So delayed mothers' initiation of breastfeeding leads to the early introduction of pacifiers to their infants.

The table indicated that 36.8% of the infant with three hours of scheduled breastfeeding and 25% of them on daytime breastfeeding received pacifiers in the first and the second

months of life, respectively. Also, 31.0% of the infant on-demand breastfeeding received pacifiers in the first month of life, with a highly statistically significant difference (P-value ≤ 0.005).

Regarding exclusive breastfeeding, the table showed that 44.7% of infants who didn't receive exclusive breastfeeding, their mothers introduced pacifiers to them in the first month of life versus 25.4% of the infant on exclusive breastfeeding with statistical significance difference (P-value ≤ 0.05). But no statistically significant difference was found between introducing the pacifiers to infants and offering bottle feeding to them.

8. Discussion

Whether to use pacifiers is a question that parents must settle for themselves depending on how they feel about them and their infant's needs. Benefits of pacifiers include the following: They appear to be comforting to an infant, they may aid in pain relief, and there is a decreased risk of SIDS. Risks associated with pacifiers are an increased incidence of acute otitis media (ear infection), possibly a negative impact on breastfeeding, and dental malocclusion, particularly if usage is greater than 2 to 3 years [12].

Concerning the time of introducing of the pacifier to infants, the current study illustrated that less than one-third of the studied mothers had introduced pacifiers to their infants before ending of first the months of life, less than one-fifth of them introduced it at the 2nd month, and the minority of them at 5th and 7th month. This result answered research question number one.

This result comes in line with those obtained by Santos, Buccini, & Sebastião [13] who studied "Factors associated with pacifier use among children of working women with child care in the workplace" and mentioned that more than one-third of the studied sample responded that they introduced the pacifiers to their infants before two weeks, less than one-fifth of them introduced it between 16:30 days; more than a tenth of them introduced it between 31:60 days; 7.1% of them introduced it between 61:90 days; 7.1% of them introduced it between 91:120 days; 10.7% of them introduced it between 121:150 days, and 14.3% introduced it to their infants after 150 days of life.

Hermanson & Åstrand [14] confirmed this result who studied "The effects of early pacifier use on breastfeeding: A randomized controlled trial" and reported that more than one-third of the studied mothers began to use the pacifier by two weeks' postpartum, less than one fifth began by six weeks' postpartum, slightly less than three-quarters introduced the pacifier at six months and the minority of them began to use it between 6 and 24 weeks' postpartum.

This result also was supported by the findings of De Deus, Gomes, Da Silva & Giugliani [15] who studied "Influence of pacifier use on the association between duration of breastfeeding and anterior open bite in primary dentition" and stated that mothers introduce pacifier at any time.

Regarding the breastfeeding pattern, the current study showed that less than a fifth of the studied mothers initiated breastfeeding for their infants in the first hour of life; three-quarters of them responded that they offer to breastfeed according to the infant's demand and feeding them exclusive breastfeeding. This result answered research question number four. This result differs from Azzeh [16], who reported that nearly three-quarters of the studied sample initiated breastfeeding for their infants within the first 24 hours.

Also, this result contradicted those obtained by Firdausya & Hardini [17] who studied "the correlation between mothers' breastfeeding pattern and stunting among toddlers" and reported that the majority of the studied mothers who had normal babies starting breastfeeding within hours after delivery. In addition, Azzeh [16] said that half of the studied mothers initiated breastfeeding during the first 24 hours of infants' lives.

Regarding offering exclusive breastfeeding, the current study showed that three-quarters of the studied mothers offered exclusive breastfeeding to their infants. This result was confirmed by Firdausya & Hardini [17], who stated that

near two-third of the studied mothers offered exclusive breastfeeding to their infants. This result contradicted with findings of Kamel, Sabry, Ismail, & Nasr [18] studied "Pattern of infants' feeding and weaning in Suez Governorate, Egypt: an exploratory study" and reported that most infants were ever breastfed. Exclusive breastfeeding was not widely practiced.

Regarding bottle feeding, the current study showed that less than half of them feed their infants by the bottle. Nearest to one-quarter of mothers responded that they introduced bottle feeding at 6th months of infant's life, and the most infants are receiving feeding by bottle more than three feeds per day.

This result comes in line with Olatona, Adenihun, Aderibigbe & Adeniyi [19] who studied "complementary feeding knowledge, practices, and dietary diversity among mothers of under-five children in an urban community in Lagos State, Nigeria" and reported that the majority of the studied mothers did not use bottle feeding.

These results were supported by Ventura & Teitelbaum [20] who studied "maternal distraction during breast-and bottle feeding among Woman, Infants, and Children and non-Woman, Infants, and Children mothers and reported that two-thirds of the studied mothers offer a mix of breast and bottle and only more than one fifth provides bottle feed only to their infants.

This result came inconsistently with results obtained by Kamel *et al.* [18], who reported that most mothers initiated artificial feeding during the first month of life.

Regarding mothers opinions about reasons for using a pacifier to their infants, the present study found that most of the studied mothers responded that pacifiers are providing comfort for infants during the stressful episodes, followed by more than three-quarters of them their opinions were infants crying a lot at night and to infants' hungry. This result answered research question number two. This result was confirmed by Rocha *et al.* [21] who investigated pacifier use and breastfeeding and confirmed pacifiers are soothing and relaxing for the baby and help various aspects of caring for a newborn. Many mothers noticed that a pacifier could help babies sleep.

This finding is consistent with the analysis by Mauch, Scott, Magarey, & Daniels [22] who investigated pacifier usage in new mothers and stated that pacifier use's critical factors included soothing babies, helping infants fall asleep, making them relaxed and quiet.

In addition, this result was in agreement with those obtained by Mohammed [6], who stated that the majority of the mothers reported that the reasons for using the pacifier were to stop crying of a baby. Factors associated with pacifier use were also investigated by Santos *et al.* [13], who found the key factors associated with pacifier use were related to behavior issues (cry, sleep, fussiness).

Regarding the long-term effects of pacifier uses on infants from the mothers' opinions, the current study showed that the majority of the studied mothers responded that the most common long term effects of pacifier uses are gastrointestinal infection (as diarrhea, gastritis), decreased child appetite, the child continues until he/she becomes older while two-third of them responded that long term effects of pacifier use are the malocclusions in the primary teeth.

This result comes in line with Rocha *et al.* [21], who stated that the mothers' concerns about the long-term effects of pacifier use were difficulty weaning their child off a pacifier

and the potential effects on dental health. In addition, Pansy *et al.* [23] who studied "Pacifier use: What makes mothers change their mind?" mentioned that more than one-fifth of mothers declared that they would not use a pacifier as it can cause the malformation of the teeth.

Concerning relation between time of introducing pacifiers for infants, and patterns of breastfeeding among mothers, the current study revealed that delayed mothers' initiation of breastfeeding leads to the early introduction of pacifiers to their infants. Thirteen percent of mothers who initiated breastfeeding in the first hour after delivery responded that they introduce a pacifier to their infants in the first month of life, while nearly half of the mothers initiated breastfeeding after three days of birth responded that they introduce a pacifier to their infants in the first month of life with statistically significant difference ($P\text{-value} \leq 0.05$).

In a study conducted by Azzeh *et al.* [24] there had been discovered that one factor related to the delay in the early initiation of BF in the Mecca area is the use of a pacifier during the infant's first six months of life.

The present study revealed that demand breastfeeding to infants decreases the prevalence of using pacifiers in the first month of life; as more than sixty percent (36.8% and 25%) of infants with three hours scheduled breastfeeding and on day time breastfeeding received pacifiers in the first and the second months of their life respectively; while one-third percent only of infants on-demand breastfeeding received pacifiers in the first month of life with a highly statistically significant difference ($P\text{-value} \leq 0.005$).

This result agrees with the intervention review by Jaafar *et al.* [4] to determine the effect of restricted pacifier use in breastfeeding term infants for increasing duration of breastfeeding, which insists on mothers should be encouraged to breastfeed early, breastfeed their babies upon request and stop providing or pacifiers.

Regarding exclusive breastfeeding, the present study showed that exclusive breastfeeding delayed introducing of pacifiers to infants as nearly half of infants who didn't receive exclusive breastfeeding; their mothers introduced pacifiers to them in the first month of life versus 25.4% of them on exclusive breastfeeding with statistical significance difference ($P\text{-value} \leq 0.05$). The present study also revealed that no statistically significant difference was found between introducing the pacifiers to infants and offering bottle feeding to them. This is in compliance with Howard *et al.* [25] and Lindau *et al.* [26] in which they found that mothers who introduced pacifiers during two weeks had an elevated chance of leaving breastfeeding before four months and that "pacifier use in the first four weeks of life significantly decreased exclusive breastfeeding at four weeks and shortened overall breastfeeding duration".

Regarding the studied mothers' demographic data, the current study showed that less than half of the studied mothers had diploma educational level, more than three-quarters of them are living in rural areas, most of the mothers were housewives, and more than half of them had low income.

This result comes in the same line with Azzeh [16], who studied "determinants of exclusive breastfeeding and patterns of complementary feeding practices in mecca city, Saudi Arabia" the mean age of the mothers was 29.8 ± 6.2 years (range, 17-44 years), the majority of the studied sample had intermediate education, more than half of the studied sample had low income, and more than two-thirds of

them were housewife.

Also, this result was confirmed by Mohammed [6], who studied "identification of factors associated with the use of pacifiers in children" and illustrated that the majority were in primary school, followed by secondary school, and finally university level.

9. Conclusion

The current study concluded that delayed mothers' initiation of breastfeeding leads to the early introducing of pacifiers to their infants. Demand breastfeeding to infants decreases the prevalence of using pacifiers in the first month of life; exclusive breastfeeding delayed introducing pacifiers to infants. The present study revealed no statistically significant difference between introducing the pacifiers to infants and offering bottle feeding. Most of the studied mothers responded that pacifiers used to provide comfort for infants during stressful episodes, quiet sleeping and calm infants, also used in case of insufficient milk syndrome, mastitis, or abnormalities of the breast or the nipple as pacifier alleviates infants teething discomfort. Minor percent of the studied mothers initiated breastfeeding for their infants in the first hour of life, but three-quarters of them responded that they offered to breastfeed according to infants' demand. Besides, two-thirds of infants received exclusive breastfeeding until six months.

10. Recommendations

Encourage early initiation of breastfeeding to infants in the first hour of life, exclusive breastfeeding, and emphasize feeding infants' demand. Educate mothers about the risks of pacifier use.

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