MOTHER'S KNOWLEDGE AND BELIEFS ABOUT HOME MANAGEMENT FOR INFANT COLIC IN RAPARIN ADMINISTRATION

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ABSTRACT

Background

Infant colic is a difficult and complex experience for parents and infants in the first few months of their lives, which causes excessive crying and discomfort for infants as well as anxiety and distress for mothers.

Objectives

To assess the level of information and beliefs that influence mothers regarding home management for reducing infant colic.

Materials and Methods

A cross-sectional descriptive study was conducted in the Raparin administration from the period of 15 May 2022 to 15 July 2022. Participated mothers in this study was 245 who had one or more children and visited the hospital for treatment, the data was obtained through direct interview by questionnaire which included demographic characteristic, 15 items regarding information, 10 items about foods that cause infant colic and 17 items concerning to method used to eliminate infant colic. The data were analyzed through the SPSS program and the chi-square test was used to find the association.

Results

The results demonstrate that the majority of mothers (47.6%) who participated were between in the age group (30-39) years old, followed by (75.9%) of mothers were living in urban places, and the majority of mothers (86.1%) were housewife. As well as it has also been revealed that mothers had good knowledge (81.7%) and concerning the beliefs (42.6%) of samples know practices used to reduce infant colic. Concerning significance, there was no significant association between the mother's knowledge and their socio-demographic characteristics and there was a significant association between the mother's beliefs and (occupational status) at p-value < 0.046

Conclusion

The mothers had good knowledge about infant colic and cultural influence still impacts mothers' beliefs regarding home management for infant colic. Mothers' knowledge had a non-significant association with their demographic features and a significant association between mother's beliefs and their occupational status.

Keywords: *Infant colic, Mothers, Knowledge, Beliefs, Management, Raparin/Sulaimani.*

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INTRODUCTION

One of the most common gastrointestinal problems is infant colic, which causes frequent complaints and referrals of the infant's family [1]. As well as it is defined as high-pitched and excessive crying commonly seen in the afternoon and evenings. In the second to third weeks of life, the situation starts, between the sixth and eighth weeks reaches a peak and the condition disappears by itself in the three to four months of age [2-4]. However, about 20% of babies in the world suffer from excessive crying or colic attacks [5].

Paroxysmal, crying out of control also fussing differently in healthy infants below three months of age, with periods of crying more than in more than three days a week for lasting three weeks this is a common criterion used to define infant colic which is known as Wessel's criteria in 1954 [6].

The pathogenesis of colic in infants is still unclear even with 50 years of research [7-10]. Several expected etiological factors have been mentioned such as inflammation in the gastrointestinal tract, an immature system of nerves, altered gut flora, and sensitivity to foods may be associated. Another arguable factor that has been suggested is the theories of psychology [11, 12]. Also, behavioral factors including tensions in the family, poor interaction between parents with \ each other, and the infants are debated [11].

Colic diagnosis depends on an infant who is less than or five months old, presenting with prolonged and repeated courses of irritability of infants, fussing, parent reports regarding crying that happens without the evidence of elevating infant's temperature, unhealthy state, failure to thrive and without any clear causes the caregiver can't be resolved or prevented [13].

For infantile colic, several management strategies have been mentioned. The first line for treating colic is the modification in the technique of feeding and use of calming practices also, some caregivers who provide care for infants in the postnatal period use cultural methods. For bottle-fed infants changing feeding technique examples include using the vertical position for feeding and recurrent burping. Providing warm baths for the infant, massaging for infant's abdomen and sucking a pacifier, providing sugary water or herbal teas for infants, music, vibration, spinal manipulation, picking up the baby, rhythmic rocking, swaddling/ covering and patting are intervention examples for calming technique cultural methods. Another method for therapying of colic is parental support. Changing the mother's diet for breastfed babies, using a hydrolyzed protein formula for formula-fed babies, or using simethicone are some further possible therapies [14-16]. The vicious cycle of prolonged crying of an infant with family discomfort can cause a negative psychological effect on the parents, including child abuse. Current evidence proposes that extended periods of colic in infants can induce fear with anxiety and fear in the parents and members of the family [17]. The knowledge of the family regarding the start of the situation and about this benign situation and its essential course may reduce those adverse impacts and provide the mother with more confidence in her parenting [18].

In a study from Turkey concerning to evaluation of the knowledge level and attitude of mothers about infant colic there were 82% of the mothers had previous knowledge about infant colic [19]. Also, another study from Saudi Arabia regarding the assessment of maternal knowledge about infants, reported that 80% of mothers did not have previous knowledge regarding infant colic [18]. In addition, a study from Turkey in 2007 about methods used to eliminate infants reported that 57.1% of mothers used behavioral methods to reduce colic [20].

MATERIALS AND METHODS

Design of the study

A cross-sectional descriptive study design has been carried out to conduct the study.

Sample and setting of the study

The sample size of the study was 245 mothers according to the formula which used a 95% confidential level and error of the sample 5% and also the prevalence rate of the state (21). The participants were interviewed directly from 15 May to 15 July 2022, the data were collected from Maternal and Pediatric Teaching Hospital (105 mothers), Kewarash Primary Health Care Center (28 mothers), Raparin Primary Health Care Center (105 mothers), and Shahidan Kaladze Teaching Hospital (7 mothers).

A non–non-probability (purposive)/convenience sampling technique was applied in the present study. A questionnaire method was used to obtain the objectives of the study according to a review of the literature, which includes three parts socio-demographic characteristics such as age, residential place, occupational status, level of education, and family income. The second part of

knowledge about infant colic consists of 15 items; the final part includes those beliefs that eliminate colic in infants, consisting of 17 items. The scores of I know (3), uncertain (2) and I don't know (1) were used to assess the knowledge and beliefs regarding home management for infant colic.

A pilot study was conducted in Ranya hospitals on 20 mothers from 21-29 April in 2022. Regarding the validity, 10 experts investigated the clarity of the questionnaire. As well as the rate reliability of the questionnaire was 0.78.

The collected data was analyzed through Statistical Package for Social Science (SPSS version 26). The association between socio-demographic features with knowledge and beliefs was found by using a Chi-square test P value less than 0.05 indicating a significant association.

Administration and ethical considerations:

Ethical approval was obtained from the scientific and ethical committee of the College of Nursing /University of Raparin based on Decree Number (7/29/145) dated (29/3/2022) also the researcher during and after conducting the study performed ethical standards including permission and protecting the privacy of participants.

RESULTS

Table (1) shows that 47.6% of the study sample mothers in age 30-39 years, followed by 41.2% in age 17-29 years, with a minimum of age 17 years and a maximum is 48 years. The residency indicates the majority of the participants live in urban 75.9%. the same table shows that the majority 86.1% of the study sample was housewives. Also, the Results of the present study show, that close to one-third 33.1% of the sample primary graduated, and regarding income status, the highest proportion of them have adequate income 58.6%.

Table (2) demonstrates that 96.7% of the mothers in the sample answered that they knew infant colic occurs as a result of the accumulation of excess gas in the abdomen, and 92.7 of the mothers knew that most infants have colic without a diagnosis, but only 49.0% of the mothers knew that about 15%–20% of infants have colic according to scientific principles. The same table shows that the majority (81.2%) of mothers in the study sample answered that they have information that colic goes away about 50% by three months and 90% by nine months of age. According to the answers of the mothers, 93.1% knew that the types of food taken by the mother caused colic in babies. As well, 84.1% of participant mothers said their baby was at a higher risk of colic by using formula feeding. The table shows that 34.7% of samples were either uncertain or didn't have information about a baby crying for three hours a day for three days a week for a three-week duration. Furthermore, about 66.1% of mothers knew that the crying of a colicky baby in the late afternoon and evening was normal.

Results of Table 3 demonstrate that 29% of mothers (20.0% were uncertain and 9% had no information) that colic usually reaches its peak at about 6 to 8 weeks. According to the table results, 84.5% of mothers knew that a colicky baby arches its back when crying, 86.5% of mothers knew that the baby's face becomes red and tense during colic, and 87.3% of mothers said the baby's fists clench when the baby cries. In addition, 92.2% of mothers said the belly of the baby becomes tight during colic. The results of the table show that most mothers (80.8%) think colicky babies are fed well. Finally, 95.1% of mothers believed that babies with colic do not indicate unhealthiness.

Table (3) indicates that 38.8% of participant mothers take the infant to a calm and dimly lit environment to reduce colic. Also, most of the mothers 89.8% know taking the infant on a lap reduces colic. After, 87.8% of mothers change the position of their infant to decrease colic. A lot of mothers 94.7% manipulate massage to bring down colic in their infant. The same table show, that 51.0% of mother use the warm application on the infant's abdomen. Also, 84.1% of mothers think that listening to the spiritual method calm down colic in infant but 70.2% of mothers accepted that listening to music has no effect. In addition, a large number of mothers 82.0% of the opinion giving juice to their infants doesn't reduce colic although, 71.4% of mothers refused to give honey to decrease their infantile colic.

Also, 80.4% of mothers reject giving water with lemon juice to reduce the infant's colic. The same table shows, that 71.8% of mothers decline giving olive oil to reduce colic. Furthermore, quitting the infant from breastfeeding reduced by 80.1% of mothers. After, 80.8% of mother don't give sugar with water to decrease colic in their infants. The result of the table shows, that 78.4% of mothers don't use the Bazhala technique to reduce colic. Additionally, 78.0% of mothers don't give forest fruit syrup with oil to relieve colic.

Finally, 75.5 of the mothers 75.5% gave simethicone medication and 64.5% gave probiotics to reduce colic in their infants.

Table (4) indicates that there was no significant association between the mother's knowledge and their socio-demographic characteristics at p-value > 0.05.

Table (5) highlights that there was a significant association between the mother's beliefs and occupational status at P- P-value < 0.05 and there were no significant associations between the mother's beliefs and (age, residential place, and level of education) at the p-value> 0.05.

Table 1. Socio-demographic characteristics of mothers.

No.	Characteristics	Category	F	%
1.	**Mother's age (year)**	17-29	99	41.2
		30-39	118	47.6
		40-49	28	11.2
		M.S = 31.22	SD = ± 6.514	
		Minimum = 17	Maximum = 48	
2.	**Residential place**	Urban	186	75.9
		Suburban	55	22.4
		Rural	4	1.6
3.	**Occupational status**	Housewife	211	86.1
		Governmental employed	27	11.0
		Non-governmental employed	1	0.4
		Self-job	6	2.4
4.	**Level of education**	Illiterate	29	11.8
		Able to read and write	14	5.7
		Primary school	81	33.1
		Secondary school	46	18.8
		Institution graduate	42	17.1
		College and post-graduate	33	13.5
5.	**Family income**	Insufficient	26	10.6
		Barely sufficient	75	30.6
		Sufficient	144	58.8
Total			**245**	**100.0**

No (number), F (Frequency), % (Percentage), M.S (Mean of score), SD (standard deviation)

Table 2. Assessment of mothers' knowledge about home management for infant coli.

No.	Questions	I know		Uncertain		I don't know	
		F	%	F	%	F	%
1.	**Did you know colic is an accumulation of excessive gases in the abdomen?**	237	96.7	5	2.0	3	1.2
2.	**Do you know colic occurs in all babies but it is different from one to one and cannot be diagnosed?**	227	92.7	13	5.3	5	2.0
3.	**Do you know according to scientific principles about 15% - 20% of babies have colic?**	120	49.0	76	31.0	49	20.0
4.	**Do you know the colic goes away about 50% by 3 months and 90% by 9 months of age?**	199	81.2	32	13.1	14	5.7
5.	**Do you know food taken by breastfeeding mothers can cause colic in their infants?**	228	93.1	10	4.1	7	2.9
6.	**Do you know formula-feeding baby's a higher risk of colic?**	206	84.1	24	9.8	15	6.1
7.	**Do you know colic babies cry 3 hours per day for 3 days a week for 3 weeks?**	160	65.3	51	20.8	34	13.9
8.	**Do you know cry the most in the late afternoon and evening?**	162	66.1	53	21.6	30	12.2

Table 2. Continued.

9.	**Do you know it usually reaches its peak in about 6 – 8 weeks?**	174	71.0	29	20.0	22	9.0
10.	**Do you know colic baby may arch their back when crying?**	207	84.5	21	8.6	17	6.9
11.	**Do you know during colic the face of the baby becomes red and tense?**	212	86.5	18	7.3	15	6.1
12.	**Do you know the fists are clenching when the colicky baby cries?**	214	87.3	17	6.9	14	5.7
13.	**Do you know the belly of a colicky baby becomes tight?**	226	92.2	14	5.7	5	2.0
14.	**Do you know colicky babies feed well?**	198	80.8	30	12.2	17	6.9
15.	**Do you know colicky babies feed well?**	233	95.1	8	3.3	4	1.6
Total			**245**			**100.0**	

No (number), F (Frequency), % (Percentage)

Table 3. Mother's beliefs for eliminating colic.

No.	Beliefs	I know		Uncertain		I don't know	
		F	%	F	%	F	%
1.	**Taking the infant to a calm and dimly lit environment.**	95	38.8	66	26.9	84	34.3
2.	**Taking the infant on their lap.**	220	89.8	11	4.5	14	5.7
3.	**Change infant position.**	215	87.8	18	7.3	12	4.9
4.	**Massaging the infant's abdomen.**	232	94.7	5	2.0	8	3.3
5.	**Using a warm application on the abdomen.**	125	51.0	34	13.9	86	35.1
6.	**Listening to spiritual methods.**	206	84.1	18	7.3	21	8.6
7.	**Listening to music.**	36	14.7	37	15.1	172	70.2
8.	**Giving juice to infants.**	30	12.2	14	5.7	201	82.0
9.	**Giving honey to infants.**	58	23.7	12	4.9	175	71.4
10.	**Give water with lemon juice.**	34	13.9	14	5.7	197	80.4
11.	**Giving olive oil to infants.**	52	21.2	17	6.9	176	71.8
12.	**Quitting the infant from breastfeeding.**	23	9.4	27	11.0	195	80.1
13.	**Giving sugar with water.**	36	14.7	11	4.5	198	80.8
14.	**Using Bazhala on the infant's abdomen.**	39	15.9	14	5.7	192	78.4
15.	**Giving forest fruit syrup with oil.**	31	12.7	23	9.4	191	78.0
16.	**Simethicone**	185	75.5	11	4.5	49	20.0
17.	**Probiotic**	158	64.5	23	9.4	64	26.1
Total			**245**			**100.0**	

No (number), F (Frequency), % (Percentage)

Table 4. Association between some demographic characteristics and mother's level of knowledge.

Demographic features	Variables	Mother's level of knowledge				X2	d.f	p-value
		I know	Uncertain	I don't know	Total			
Mothers age	17-29	102 101.6	1 2.1	2 1.3	105 105.0	1.998	4	0.736 N. S
	30-39	108 108.3	3 2.3	1 1.4	112 112.0			
	40-49	27 27.1	1 0.6	0 0.3	28 28.0			
Total		237 237.0	5 5.0	3 3.0	245 245.0			
Residential place	Urban	180 179.9	3 3.8	3 2.3	186 186.0	1.891	4	0.756 N. S
	Suburban	53 53.2	2 1.1	0 0.7	55 55.0			
	Rural	4 3.9	0 0.1	0 0.0	4 4.0			
Total		237 237.0	5 5.0	3 3.0	245 245.0			
Occupational status	Housewife	204 204.1	5 4.3	2 2.6	211 211.0	2.387	6	0.881 N. S
	Governmental employed	26 26.1	0 0.6	1 0.3	27 27.0			
	Non-governmental employed	1 1.0	0 0.0	0 0.0	1 1.0			
	Self-job	6 5.8	5 5.0	0 0.1	6 6.0			
Total		237 237.0	5 5.0	3 3.0	245 245.0			
Level of education	Illiterate	26 28.1	2 0.6	1 0.4	29 29.0	19.554	12	0.076 S
	Able to read and write	12 13.5	2 0.3	0 0.2	14 14.0			
	Primary school graduate	79 78.4	1 1.7	1 1.0	81 81.0			
	Secondary school graduate	46 44.5	0 0.9	0 0.6	46 46.0			
	Institution graduate	41 40.6	0 0.9	1 0.5	42 42.0			
	College and post-graduate	33 32.0	0 0.7	0 0.4	33 33.0			
Total		237 237.0	5 5.0	3 3.0	245 245.0			

X2 (chi-square), d.f (degree of freedom), S (significant), N. S (not significant)

Table 5. Association between socio-demographic characteristics of mothers and beliefs.

Demographic features	Variable	Mother's beliefs				X2	d.f	P-value
		I know	Uncertain	I don't know	Total			
Mothers age	17-29	40 40.7	26 28.3	39 36.0	105 105.0	1.064	4	**0.900 N. S**
	30-39	43 43.4	33 30.2	36 38.4	112 112.0			
	40-49	12 10.9	7 7.5	9 9.6	28 28.0			
Total		95 95.0	66 66.0	84 84.0	245 245.0			
Residential place	Urban	76 72.1	44 50.1	66 63.8	186 186.0	4.632	4	**0.327 N. S**
	Suburban	18 21.3	20 14.8	17 18.9	55 55.0			
	Rural	1 1.6	2 1.1	1 1.4	4 4.0			
Total		95 95.0	66 66.0	84 84.0	245 245.0			
Occupational status	Housewife	80 81.1	59 56.8	72 72.3	211 211.0	12.829	6	**0.046 S**
	Governmental Employed	15 10.5	5 7.3	7 9.3	27 27.0			
	Non-governmental employed	0 0.4	1 0.3	0 0.3	1 1.0			
	Self-job	0 2.3	1 1.6	5 2.1	6 6.0			
Total		95 95.0	66 66.0	84 84.0	245 245.0			
Level of education	Illiterate	8 11.2	14 7.8	7 9.9	29 29.0	17.798	12	**0.122 N. S**
	Able to read & and write	5 5.4	6 3.8	3 4.8	14 14.0			
	Primary school graduate	30 31.4	18 21.8	33 27.8	81 81.0			
	Secondary school graduate	15 17.8	14 12.4	17 15.8	46 46.0			
	Institution graduate	20 16.3	10 11.3	12 14.4	42 42.0			
	College and post-graduate	17 12.8	4 8.9	12 11.3	33 33.0			
Total		95 95.0	66 66.0	84 84.0	245 245.0			

X2 (chi-square), d.f (degree of freedom), S (significant), N. S (not significant)

DISCUSSION

The number of participant mothers in this study was 245, the present study shows that Less than half 47.6% of participant mothers in the group of 30-39 years old, this result supported a study done in Saudi Arabia [18] which is about 42.2% of participant mother in the group of 30-39 years old. The mean of the mother's age was 31.22 ± 6.514. Also, 17 years is the minimum and 48 is the maximum of the mother's age.

Concerning the place of residential, a quarter (75.9%) of the mothers are living in urban, this result regarding a study done in Iraq [22]. which is 68.6% of the mothers living in the city.

Regarding the occupation of the participant mothers, most of them 86.1% are housewives, the result is nearly as a study in Turkey which indicates 85% of their samples not working [23]. Also, the result of this study disagrees with the study in Turkey which is most of them (78.3%) were working [24] .

Related to the level of education of the mothers, 33.1% were primary graduate level depending on the results, another study in Turkey had similar outcomes about 32.7% of the mothers having primary learning degrees [19]

Regarding the family income status of participant mothers, the results denote 58.8% of the sample living on sufficient income, this outcome is similar to the study in Oman where 70.3% of mothers had sufficient salary [25].

The most important way to manage colic in infants, the mothers must have previous knowledge on reducing colic, our study assesses mothers' knowledge which indicates most of them had good knowledge. Based on the outcome 96.7% of mothers knew how to define colic, this evidence disagrees with a study done in Nigeria [26] where only 16.1% believed that during the colic attack, the gas was present in the intestine.

In the present study, 92.7% of the mothers reported that they knew about the occurrence of colic in most of the infants but sometimes they cannot diagnose the colic in their baby. A study was done by Savino and Tarasco in 2010. The result of the study indicates, 5.3% of mothers were not sure of their knowledge referring to developing colic in the mother's baby without a diagnosis but only 2.0 of them did not have any knowledge regarding the rate of occurring infant colic.

The result of this study show, that (49.0%) of samples answered they had enough knowledge about the prevalence of infant colic 31.0% of mother's uncertain opposite of it 20.0% of participants did not know many facts regarding the colic of the baby. However, a previous study explained the prevalence of colic which occurs between 15%- 20% of the baby [27].

Concerning the time of limiting infant colic, 81.2% of mothers knew that 50% of infants would be fine by 3 months and 90% by 9 months of age, a study applied in 2015 described a high portion of infant colic resolved in 3 to 6 months of age [28].

In the outcome of the current study appears, that one of the causes of colic food consumption by breast-feeding mothers, and 93.1% of them knew that, the evidence of this survey is similar to a study in which most of the mothers 89.5% avoided the gas foods because increase colic in their infants [29].

Regarding formula feeding which has higher risks of elevating the rate of infant colic, 84.1% of mothers knew about it, the result of this study supported by a study done in Turkey [19].

Regarding the duration of crying results show, that 65.3% of the mothers knew that infant episodes cry 3 hours per day for 3 days a week and continue for 3 weeks, the consequence is close to a study in Nigeria [30] which 61.9% of mother could define colic according to time of crying.

Regarding the time of crying results indicate, that 66.1% of mothers answered their infants mostly cry in the late afternoon and evening, this finding is supported by a review which indicates that babies during colic pain mostly cry in the late afternoon and evening [31].

Regarding the colic attack, (71.0%) of the mothers knew that it reaches a top between 6 - 8 weeks of age, a study published in Singapore (2019) said the baby's crying usually reaches a peak at 6 – 8 weeks of age [32].

Regarding the features of infant colic 84.5% of the mothers knew arching of the back when the baby cries during colic pain, this result is similar to 85.7% of mothers who noted arch back in their infants [33]. Moreover, 86.5% of mothers in the present study knew tension and red the facial of infants in the course of colic, this is close to 84.1% of mothers who noted flushing in their baby [34]. In addition, the majority of mothers in the present study 87.3% of mothers knew clenched fists when infants have colic, a study done

by [34] results found 75.0% of respondents determined this feature in their infants. Regarding the tightening of the abdomen during infant colic pain results show, that 92.2% of mothers knew this knowledge, which is similar to 90.9% noted in the [34]

The present study manifested, 80.8% of the mothers knew that babies feed well at the time of having colic, this finding was published in the (2009) from Nigeria which indicate more than half (63.4%) of the baby did not refuse feeding in the course of colic [26].

Concerning the health status of babies with colic the results show, that most (95.1%) of the mothers thought colic in their infants was a normal condition and did not indicate unhealthy status, A review supported this result which noted colic mostly healthy status [35].

Less than half of the mothers knew the methods of home management for infant colic. 38.8% of mothers took their infant to a calm and dimly lit environment to relieve colic pain, this is similar to the study in 2007 nearly half (48.2%) of respondents used this technique [20].

Regarding holding the infant on a lap results show, that 89.8% of the mothers believed that it is the most effective method for quieting their infants during a colic attack, a study in Turkey (2020) results showed that 67.6 of mothers used this method. Furthermore, 87.8% of mothers changed their infant position to eliminate colic, a study which was done in Turkey (2007), reported 79.4% of participants used that method.

Regarding the massaging infant's abdomen outcomes indicate, that 94.7% of respondents believed that the most effective procedure to decrease infant discomfort. This is similar to a study done in Turkey [29] where 89.5% of mothers use the indicated technique. The using warm applications to the abdomen of infants, over half 51.0% study sample applied a hot towel to quiet the baby's pain when colic attacked, while a study in Turkey (2018) reported that 63.0% did not use any application.

This difference is due to the culture and level of awareness of individuals that have this difference. In some countries that used spiritual healing regarding their culture and religion for treating diseases, 84.1% of mothers started Quran sound for infants to calm them, this was described in the study [36] where they used spiritual healing to decrease colic.

Concerning listening to music for reducing colic the finding demonstrates, that 70.2% of mothers did not believe this method, and a study reported that 81.0% did not use music sound to relieve colic [23].

Regarding giving juice to infants, a high percentage (82.0%) of participants refused this method because they thought it created harmful health conditions for babies, a study in 2020 indicated that 72.8% of mothers avoid giving juice to their infants [37]. The present study shows, that 23.7% of mothers believed that giving honey to infants reduced colic, there is no previous study to prove that giving honey to infants is effective. Moreover, the majority (80.4%) of mothers reported that they did not give lemon water to ease colic pain, these findings were supported by a study where 97.0% of the mothers refused lemon water only 3.0 % gave it to their infants [29]. Regarding donated olive oil to infants about a quarter of 21.2% of mothers provided it to their babies to eliminate colic pain but 71.8% of them did not give it, a study of [20] where only 1.4% of infants received oil of olive.

The majority 80.1% of mothers answered that they did not know about quitting their infants from breastfeeding also 9.4% of them used this method for reducing colic, a study done in Turkey (2020) indicated only 1.7% of participants believed that discontinued breastfeeding reduces infant colic. In addition, 80.8% of mothers did not believe that giving sugary water to infants reduces colic but 14.7% of them think that it calms infants, these results disagree with the results of [29] where only 6.2 of mothers used sweet water to decrease colic.

More than three-quarters (78.4%) of the mothers reported that they did not agree with the Bazhala method because it has a great risk to babies which may cause death, Bazhala is a technique used in Kurdish society were shaving the infant's abdomen with a razor, although 15.9% of them believed of that method and 5.7% of them answered they are unsure. 78.0% of participants reported they did not know about giving forest fruit syrup with oil to infants and they refused it.

Approximately 75.5% of the mothers said that they utilize semithicone medication for reducing colic, a study in 2020 reported that only 26.3% of the participants gave the semithicone to their babies [19]. Another study is similar to the results of the current study shows 71.6% of respondents used simethicone [38]. Additionally, 64.5% of mothers gave probiotics to their infants to decrease colic pain, these findings were

in contrast to a study of study done in Turkey (2021) indicated that 36.3% used probiotics.

The findings demonstrated, that there was no significant association between the age of the mothers who participated in our study and with level of knowledge regarding home management of infant colic (P= 0.736). this result is different from the study that was done in Saudi Arabia there was a high statistically significant correlation between the mother's age and their knowledge P < 0.05 [18].

Also, it has been revealed, that there is no statistically significant association between residential place with participant knowledge regarding home management for infant colic (P= 0.756). There was no research to compare with.

In addition, the association between the occupation of the mothers and knowledge about the management of infant colic was not analytically significant (P= 0.881). the finding in the study of [13] is similar to the results of this study.

In our study, it has been found, that the association between the level of education and mother's information regarding treatment of infant colic is not significant (P= 0.076). this result is different from a study done in Nigeria[26] which reported that the association between mothers' level of education with their knowledge regarding infant colic is significant.

It has been revealed, that there is no significant association between a mother's age and residential area with beliefs that are used to eliminate infant colic (P= 0.900, P= 0.327), these findings disagree with a study done by Turkey [39] which indicated that there was significant difference between age and residential palace with their practices. The difference in this result may be due to culture, marriage time, and undermining colic in the places also having previous experience.

Also, a significant association between occupational status with beliefs applied by mothers for the management of infant's colic are present (P= 0.046), this may be explained by that women who are housewife also unemployed can be more aware of their infants than women who are employed and own the job because they did not have enough time to care the baby who suffering colic pain. We didn't get any research to compare our study that indicated the effect of the mother's job and the methods used to reduce colic.

The findings have shown, that the association between the level of education with beliefs that are used by mothers for calming infants during colic attacks is not significant (P= 0.122). these results were different with [40] reporting a significant association between beliefs used to reduce colic with educational level.

In conclusion, mothers' level of knowledge about infant colic was good because most of them had previous experience and received knowledge from doctors, nurses, health care staff, and primary health care centers. Concerning the mother's beliefs which eliminate infant colic they performed inappropriately some of them used the traditional methods which caused health risks. There was no association between mother knowledge with their demographic features. In addition, there was a significant association between mother's beliefs and occupational status.

The study recommended encouraging mothers to avoid beliefs concerning culture. Furthermore, raising mothers' knowledge regarding home management for infant colic especially those mothers who live outside of the city, giving instruction by doctors, nurses, and health care staff also form media and TV programs. It is recommended that mothers avoid those beliefs concerning the cultures about home management for infant colic.

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Conflict of interest

The authors reported there is no conflict of interest to present

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