Assessment of Mother's Information and Practice, and Factors Associated Infantile Colic in Erbil City

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ABSTRACT

Background and objectives: An excessive crying of unknown cause, the most common presentation to the primary health sector in early life, known as infantile colic, affects more than 20% of infants. Parents must deal with the terrible situation to resolve it spontaneously after the first three to four months of life. The study aimed to assess the mothers' information and practices about infantile colic in Erbil city.

Methodology: This descriptive cross-sectional study was conducted on 60 mothers who attended treatment and routine follow-ups in the outpatients of primary health care centers in Erbil city. The data was collected from the 1st of June to the 30th of November 2022, through direct interviews (face-to-face) using a questioner checklist. The data were analyzed by using SPSS (24 version) to analyze the data inferentially (frequency and percentage) and to find out the association between dependent and independent variables, the Chi-square was used to identify the factors behind their practice and knowledge of the linear regression test was used.

Results: According to the study's findings, the majority (70%) of the sample were within average gestational ages (37 or more weeks). The highest percentages (70%) were within 2 months of age. There was a very highly significant association between the infant's ages, period of crying, residency, and mother's levels of information about the baby's crying; also, there was a significant association between the mode of feeding and levels of the mother's practice about infantile colic. Linear regression found that demographic variables explain a significant amount of the variance in the mothers` information. The analysis shows that infant age and period of crying were significantly associated with the mothers` information; it was found that demographic variables explain a significant amount of the variance in the mothers` practice. The analysis shows that the mode of feeding did significantly predict the mothers` practice.

Conclusion: The majority of mothers had poor information about the signs and symptoms, etiology, and management of infantile colic, as well as poor practice about infantile colic management.

Key words: Infant; Newborn; Infantile Colic; Information; Practice; Factors; Mothers.

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INTRODUCTION

In the first few months of a baby's existence, the parents must deal with the terrible situation of infantile colic. Infantile colic describes excessive crying of unknown cause in otherwise well infants. Colic affects up to 20% of infants and is one of the most common presentations to the primary health sector in early life [1]. This disorder is thought to afflict 10% to 30% of infants worldwide [2]. Despite the significant occurrence of this condition, there are currently no standardized treatment options available because the precise underlying cause of it is unknown. Continuous baby screaming and maternal distress can create a vicious cycle that can have negative psychosocial effects on the family, including child maltreatment. According to recent research, parents and family members may experience worry and panic if this disease persists for an extended period of time in infants [2,3]. Colic pain is one of the main reasons for stress and anxiety in infants' parents, especially mothers, and there is still no specific treatment. Thus, mothers always try their best to relieve their infants' pain [4]. Infant colic occurs in 3% to 40% of all infants and has multiple etiologies. It may initiate within 3 to 6 weeks of infant age and can persist up to 36 months of age [5]. It resolves spontaneously after the first three to four months of life [1].Infantile colic is described as periods of uncontrollable crying and sporadic irritability in healthy babies between the ages of two and four weeks old that last longer than three hours per day, more than three days per week, and last for at least three weeks. Rome IV clinical diagnostic criteria were established in 2016 and the Rome criteria were modified. [6,7]. Living with a colicky child for mothers is difficult and they are physically, emotionally and nutritionally affected by their infant's sensitive behavior and inadequate weight gain [5]. Colic is typically seen as a clinical symptom that is equivalent to sudden, severe abdominal pain. It is a behavioral syndrome that typically manifests as self-limited pain in the first three months of an infant's life. Colic, which is associated with excruciating intestinal discomfort, is thought to be due to an underlying condition of the digestive tract. [8]. The study aimed to assess and find out the factors associated with mothers' information and practice regarding infantile colic care in Erbil city

METHODS

A descriptive cross-sectional study was carried out in four Primary Health Care Centers (PHCC) (Kurdistan, Nafh Akray, Mala Afandy, and Birth registration) in Erbil city /Kurdistan region of Iraq. A non-portability (purposive) sample of 60 mothers who attended the PHCC for management and treatment for their infantile colic was recruited. The sample has been estimated through the following criteria = . Whereas : Sample size. in Natural logarithm. y:It is the confidence that is able to detect the existing problem (0.95). : It is a probability of a problem in order to be detected (0.05). [9]. = 0.05, including n = ln (1- 0.95)/ ln (1- 0.05) = 59. In addition to that, the researchers increased to 60 participants. A special tool (questionnaire checklist) was constructed after a review of extensive related previous studies. The questionnaire format included 153 items and consisted of five parts: Part one: Baby's demographic information, consists of six items of general information about gestational age, newborn weight, sex, infant age, mode of feeding, and period of crying. Part two: includes the mother's demographic information; it consists of seven items of general information such as age of mother, level of education, residency, religion,

smoking, husband smoke, and a special scale for socioeconomic status. Phase three: Assessment of the mother's information about baby crying, it consists of nine items: focused on crying history, duration, period, and the time. Part four: Assessment of Mother's Information about Infantile Colic: It consists of 56 items, three Likert scales, and scored 0 for don't know, 1 for poor information, and 2 for good information. The total scores between 0 and 37.2 indicated don't know, the scores between 37.3 and 74 for poor, and the scores between 74.1and 112 indicated good answers. Regarding the mother's practice about infantile colic: It consists of (71 items), three Likert were used, and scored 0 not applicable, one (1) for some time done and two (2) for applicable. The scores ranged between 0 and 47.2 not applicable, 47.3 and 94.6 sometime done, and 94.7 to 142 applicable. Reliability (stability) was determined and measured through Cronbach's alpha for all three subscales, and it was 0.85. Data processing and statistical analysis were performed using SPSS, version 24, a statistical package for social sciences; a p-value of 0.05 is considered significant association (frequency and percentage, mean and standard deviation) and inferential statistical analysis (Chi-square test to find out the association and liner regression test to predict the factors behind mothers' information and practices).

RESULTS

Data were collected in four healthcare centers from 60 mothers who had babies with infantile colic; Table 1 shows that the majority (86.7%) of the sample were within the normal gestational age (37 weeks). The most (70.0%) of infants were within 2 months of age, less than half (31%) of the mothers used mixed feeding patterns, and regarding infant crying duration, more than half (68.3) of them had a period of crying 3 hours per day. The majority (68.3%) of participant mothers were within the age group of 20-30 years old.

Table 1: Assessment of mother's and baby demographic characteristics

Items		*n.	**(%)
Gestational age at birth	>37 /weeks	8	(13.3)
	<37 /weeks	52	(86.7)
Newborn weight	2-2.5 kg	10	(16.7)
	2.5-3 kg	21	(35)
	3-3.5 kg	24	(40)
	<3.5 kg	5	(8.3)
Gender of Infant	Boy	32	(53.3)
	Girl	28	(46.7)
Infant age	2months	42	(70)
	3months	10	(16.7)
	4months	8	(13.3)
Mode of Feeding	Exclusive Breastfeeding	20	(33.3)
	Bottle feeding	9	(15)
	Mixed breastfed	31	(51.7)
		7	(11.7)
Period of Crying	1houre	3	(5)
	2hours	41	(68.3)
	3hours	8	(13.3)
	4hours	1	(1.7)
	5hours	1	(1.7)
Age of Mother	>20	41	(68.3)
	20-30	18	(30)
	30-40		
Total		**60**	**100**

*Number **%=Percentage

Table 2 revealed the association between demographic overall variables and levels of information about the baby crying. There was a very significant association between the infant's age, period of crying and residency, and levels of mother's information about baby crying (p-value < 0.001). On the other hand, there was no significant

association between other socio-demographic variables and the levels of information about baby crying (p-value > 0.05).

Table 2: Association between demographic characteristics variables and overall levels of Information about baby crying

Mothers' Information about baby crying Demographical characteristics		Poor Level F(%)	Fair Level F(%)	Good Level F(%)	*P-value
Gestational age at birth	>37 /weeks	0 (0)	0 (0)	8 (16.7)	0.32
	<37 /weeks	10 (100)	2 (100)	4 (83.3)	
Newborn weight	2-2.5 /kg	2 (20)	0 (0)	8 (16.7)	0.34
	2.5-3 /kg	2 (20)	1 (50)	18 (37.5)	
	3-3.5 /kg	5 (50)	0 (0)	19 (39.6)	
	<3.5 /kg	1 (10)	1 (50)	3 (6.3)	
Infant age	2/months	2 (20)	1 (50)	39 (81.3)	0.001
	3/months	2 (20)	0 (0)	8 (16.7)	
	4/months	6 (60)	1 (50)	1 (2.1)	
	Exclusive Breastfeeding	1 (10)	2 (100)	17 (35.4 %)	
Mode of Feeding	Bottle feeding	1 (10)	0 (0)	8 (16.7)	0.11
	Mixed breastfed	8 (80)	0 (0)	23 (47.9)	
		7 (70)	0 (0)	0 (0)	
	1/hour				
	2/hours	3 (30)	0 (0)	0 (0)	
Period of Crying	3/hours	0 (0)	2 (100)	39 (81.3)	0.001
	4/hours	0 (0)	0 (0)	8 (16.7)	
	5/hours	0 (0)	0 (0)	1 (2.1)	
	>20	0 (0)	0 (0)	1 (2.1)	
		8 (80)	2 (100)	31 (64.6)	
Age of Mother	20-30				
	31-41	2 (20)	0 (0)	16 (33.3)	0.74
	< 41 years' old	0 (0)	0 (0)	0 (0)	
		0 (0)	0 (0)	0 (0)	
	Illiterate				
	Primary School	0 (0)	0 (0)	0 (0)	
	Intermediate school	0 (0)	0 (0)	1 (2.1)	
Level of Education	Secondary	0 (0)	0 (0)	2 (4.2)	0.93
	Diploma	1 (10)	0 (0)	8 (16.7)	
	University	2 (20)	2 (100)	7 (14.6)	
		5 (50)	0 (0)	18 ((37.5)	
	Urban	2 (20)	0 (0)	12 (25.0)	
	Rural				
Residency	Suburban	10 (100)	1 (50)	47 (97.9)	0.001
		0 (0)	0 (0)	1 (2.1)	
		0 (0)	1 (50)	0 (0)	
Total		**100**	**100**	**100**	

* P-value < 0.05 significant while 0.01is high significant

Table 3 reveals the association between demographic overall variables and levels of practice. There was a significant association between the mode of feeding and levels of the mother's practice about infantile colic with (P-value > 0.005).

Table 3: Association between demographic characteristics variables and overall levels of Practice.

Items		Mother's practice about infantile colic, n = 60			
		Poor Level F(%)	Fair Level F(%)	Good Level F(%)	P-value
Gestational age at birth	>37 /weeks	3 (16.7)	3 (9.1)	2 (22.2)	0.52
	<37 /weeks	15 (83.3)	30(90.9)	7 (77.8)	
Newborn weight	2-2.5 /kg	4 (22.2)	4 (12.1)	2 (22.2)	
	2.5-3 /kg	7 (38.9)	10(30.3)	4 (44.4)	0.75
	3-3.5 /kg	6 (33.3)	15(45.5)	3 (33.3)	
	<3.5 /kg	1 (5.6)	4 (12.1)	0 (0)	
Infant age					
	2/months	13 (72.2)	23(69.7)	6(66.7)	0.73
	3/months	4 (22.2)	5 (15.2)	1 (11.1)	
	4/months	1 (5.6)		2 (22.2)	
Mode of Feeding					
	Exclusive Breastfeeding	12 (66.7)	5 (15.2)	0 (0)	
	Bottle feeding	1 (5.6)	0 (0)	2 (22.2)	0.005
	Mixed breastfed	5 (27.8)	1 (3.0)	7 7(7.8)	
	1houre				
Period of Crying	2hours	1 (5.6)	5 (15.2)	1 1(1.1)	0.24
	3hours	0 (0)	5 (15.2)	2 2(2.2)	
	4hours	14 (77.8)	13(39.4)	4 4(4.4)	
	5hours	3 (16.7)	9 (27.3)	2 2(2.2)	
		0 (0)	0 (0)	0 (0)	
Age of Mother	>20				
	20-30	1 (5.6)	0 (0)	0 (0)	0.57
	31-41	13 (72.2)	22(66.7)	6 (66.7)	
	<41	4 (22.2)	11(33.3)	3 (33.3)	
		0 (0)	0 (0)	0 (0)	
	Illiterate				
Level of Education	Primary School	1 (5.6)	0 (0)	0 (0)	
	Intermediate school	0 (0)	1 (3.0)	1 (11.1)	
	Secondary	4 (22.2)	5 (15.2)	0 (0)	
	Diploma	4 (22.2)	5 (15.2)	0 0)	0.37
	University	6 (33.3)	13(39.4)	6 (66.7)	
		3 (16.7)	9 (27.3)	2 (22.2)	
	Total	**100**	**100**	**100**	

Table 4 A linear regression was illustrated to predict the factors behind the mothers' information and practice regarding infantile colic care. A significant amount of the variance in the mothers` information (F11, 48) = 15.98, p < .00, R2 = .78). The analysis shows that only infant age and period of crying did significantly predict the mothers` information (Beta = - .265, t (59) = - 2.804, p < .05, R2= 0.37), and (Beta = .687, t (59) = 7.516.53, p < .05, R2= 0.72) respectively. The value of R2 of infant age and period of crying, which are 0.37 and 0.72, respectively, shows that 37 % and 72 % of the change in mothers` total information regarding infantile colic is caused by a change in infant age and period of crying, respectively.

Table 4: Factors associated with mothers` information regarding infantile colic

Variables	B	CI 95%	β	t-value	P-value
Gestational age at birth	-0.155	[-0.544,0.233]	-0.070	-0.804	0.425
Newborn weight	0.002	[-0.148,0.152]	0.002	0.023	0.981
Gender of Infant	-0.066	[-0.300,0.167]	-0.044	-0.570	0.572
Infant age	-0.278	[-0.477, -0.079]	-0.265	-2.804	0.007
Mode of Feeding	0.003	[-0.131,0.136]	0.003	0.039	0.969
Period of Crying	0.616	[0.451,0.781]	0.687	7.516	<0.01
Age of Mother	0.088	[-0.154,0.330]	0.057	0.732	0.468
Level of Education	0.022	[-0.083,0.127]	0.035	0.421	0.675
Mother`s Occupation	0.013	[-0.225,0.250]	0.008	0.107	0.915
Residency	-0.059	[-0.473,0.354]	-0.022	-0.289	0.774
Religion	0.089	[-0.860,1.039]	0.015	0.189	0.851

*Infant age R2= 0.37; Period of crying R2= 0.72

Table 5 A linear regression was conducted to see if demographic variables predicted the mothers` total practice regarding infantile colic. Using the enter method, it was found that demographic variables explain a significant amount of the variance in the mothers` practice (F11, 48) = 2.56, p < 0.05, R2 = .37). The analysis shows that only mode of feeding did significantly predict the mothers` practice (Beta = 0.456, t (59) = - 3.44, p < .05, R2= 0.15. The value of R2 of the mode of feeding, which is 0.15, displays that 15 % of the change in mothers` total practice regarding infantile colic is caused by a change in mode of feeding.

Table 5: Factors affecting mothers Practice regarding home care of infantile colic baby

Variables	B	CI 95%	β	t-value	P-value
Gestational age at birth	-0.214	[- 0.775,0.346]	-0.112	-0.769	0.446
Newborn weight	0.046	[- 0.170,0.263]	0.061	0.428	0.671
Gender of Infant	-0.213	[- 0.550,0.125]	-0.162	-1.268	0.211
Infant age	-0.047	[- 0.335,0.240]	-0.052	-0.332	0.742
Mode of Feeding	0.330	[0.137,0.522]	0.456	3.445	0.001
Period of Crying	-0.037	[- 0.275,0.200]	-0.048	-0.315	0.754
Age of Mother	0.068	[- 0.281,0.417]	0.051	0.392	0.697
Level of Education	0.075	[- 0.076,0.226]	0.136	0.999	0.323
Mother`s Occupation	0.262	[- 0.081,0.605]	0.200	1.537	0.131
Residency	0.522	[- 0.074,1.119]	0.227	1.761	0.085
Religion	-0.604	[-10.975,0.767]	-0.118	-0.886	0.380

Mode of feeding R2= 0.15

Discussion

Analysis of the demographic characteristics revealed that most of the baby's gestational age is more than 37 weeks. This result is in disagreement with a study done by Talachian and his colleagues in Iran about incidence and risk factors for infantile colic among Iranian infants; they found that more than three-quarters of infant gestational ages were less than 37 weeks [10].The highest percentage of newborns' weight is 3-3.5 kg; also, most of them were about 2 months of age, and one quarter were in a mixed mood of feeding. Nearly half of them were crying for 3 hours; this result is supported by Khajeh and her friends, who reported that almost all of the infant participants cry more than three hours a day [11]. The majority of the participant's gender was boy babies; this result is similar to a study reported that babies were in excessive crying beyond 3 months and found that more than half of babies were boys in gender [12].Concerning the age of mothers shows that most of the participants were within 20-30 years old; nearly the result was supported by a study done by Saeidi and friends, who conducted a study in Iran on the effectiveness of mother-infant interaction on infantile colic and found that the majority of mothers participating were within age 20 to 35 years old [13]. The study found a highly significant association between levels of information about baby's crying; this result is similar to a study that reported the patient education concerning colic (excessive crying) in infants (beyond the basics) was association with the infant age levels of mother's information about baby crying [14]. Concerning the period of crying, the current result shows a very high significant association between the period of crying and levels of mother's information about the baby's crying; the result is in agreement with a study done by Didişen and his colleagues, who found a statistically significant association with the infants crying persistently for more than 3 hours per day [15].There was no significant association between other demographic variables and levels of information about the baby's crying. The finding of this study shows that there is no significant association between mother's information and excessive crying. This result was supported by Wal and his colleagues, who reported that there was no significant difference between poorly educated mothers and highly educated mothers regarding information about infantile colic [16].There was a highly significant association between the mode of feeding and the levels of mother's practice about infantile colic; this result is supported by Al -Shehri and colleagues, who discovered that 36% of participants thought milk allergy to be the contributing cause of infantile colic, whereas 42.6% of mothers thought the reasons for infantile colic were unknown and may involve numerous variables [2]. Also, their result is disagreement with Trunur and his friend found that the mother's diet has a direct effect on the composition of her breast milk; these foods can occasionally cause food reactions and digestive problems such as abdominal pain [14]. There was no significant association between the mother's practice and gestational age, infant weight, mother's age, and mother's education. Despriee and the colleagues reported that there was no relation between caregiver's practices and gestational age or weight [17].A linear regression was illustrated to see if demographic variables mothers practice total information regarding infantile colic. Using the enter method, it was found that demographic variables explain a significant amount of the variance in the mothers` information. The analysis shows that the

period of crying did significantly predict the mothers` information, whereas the result was supported by others who found that most colic babies have crying for longer duration and mainly at night with decreased daily sleep compared to the control group [18]. The period of crying problems was seen less often if the mother had other children, while the other examined factors showed no statistically significant relationships [19].The analysis shows that infant age did significantly predict the mothers` information, this result is supported by Didişen and his friends finding statistically significant differences with "the infants generally started to cry when they were between 3 weeks and 3 months' old. The value of R2 of infant age and period of crying, which are 0.37and 0.72, respectively, shows that 37 % and 72 % of the change in mothers` total information regarding infantile colic is caused by a change in infant age and period of crying, respectively [1]. Regarding factors affecting mothers practice of infantile colic baby's care, a linear regression was conducted to see if demographic variables predicted the mothers` total practice regarding infantile colic. It was found that demographic variables explain a significant amount of the variance in the mothers` practice. The analysis shows that only mode of feeding did significantly predict the mothers` practice. This result is similar to Critch (2011) finding a statistically significant association between feeding difficulties and colic, who suggested the potential for ongoing regulatory problems in infants presenting with clinically significant colic symptoms, and also regression analyses that examine the relation between colic, feeding difficulties, and the outcomes of infant responsiveness and parenting stress [20].

CONCLUSION

In four primary healthcare clinics in Erbil city, the majority of mothers in this study were found to be less knowledgeable about the signs and symptoms, etiology, and management of infantile colic. Increased newborn discomfort as well as moms' psychological suffering could result from this, as could poor practice about infantile colic management.

RECOMMENDED

Researchers recommended developing a health education and training program that should be made available to women in outpatient clinics, beginning with their customary prenatal well baby clinic consultations and continuing through their customary postnatal well baby clinic visits.

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