

## Assessment of Mothers' Interpretation and Care of their Infants Crying

Nayera A. Helal, Wafaa E. Ouda\*, Salma E. Hassen\*\*

Master student, \* Professor of Pediatric Nursing, Faculty of Nursing, Ain Shams University,  
\*\* Professor and Head of Pediatric Nursing Department, Faculty of Nursing, Ain Shams  
University-Cairo-Egypt.

### Abstract

**Background:** Infant crying plays an important in ensuring the survival, health, and development of the child. **Aim:** This study aims to assess mothers' interpretation and care of their infants' crying. **Research design:** A descriptive research design was used. **Setting:** The study was carried out at Ash-moon Health Office in Menofia Governorate. **Subjects:** A purposive sample which included 200 mothers who attended in the previously mentioned setting for a six months period for children' care services such as vaccination and receiving artificial milk. **Tools:** Two tools were used: First tool, pre-designed interview questionnaire sheet: **It** was used to assess studied mothers' knowledge regarding interpretation of infants' crying. Second tool, observational checklist: **It** was used to assess reported mothers' practice regarding care of infants' crying. **Results:** More than one third of infants were on artificial feeding and more than half of mothers visited the health office for receiving industrial milk. Almost three quarter of studied mothers had poor knowledge about interpretation of their infants' crying and had inadequate total reported practice about care of their infants' crying. There was positive correlation between mothers' total knowledge and their total reported practice regarding interpretation and care of their infants' crying. **Conclusion:** In light of the study results, it can be concluded that, almost three quarter of the studied mothers had poor total knowledge and inadequate total reported practice regarding the interpretation and care of their infants' crying. **Recommendations:** Provide nursing education for mothers at Health Offices to improve their knowledge about infant crying, interpretation and maternal care of infant crying.

**Key words:** Infant crying, Mothers' knowledge, Interpretation, Care.

### Introduction

Infant crying is a response to an internal or external stimulus; it is a form of basic instinctive communication (**Chittora et al., 2017**). Crying is a very powerful signal for attention, it is the main way that infants communicate distress. Whether an infant cries a lot or a little, it is important to respond quickly and consistently. Even if the causes of infants crying are unknown, mothers' consistent and genuine

response is part of building a relationship with their infants and promotes their growth and development (**Dayton et al., 2015**).

For the majority of infants crying begins at birth, peaks at 6–8 weeks, with an average duration of 2-3 hours per day, and largely subsides by 4 months. Persistent crying occurs in up to 20% of infants; however, only 10% of those infants will have an organic cause of

crying. Organic causes may include cow and/or soy milk protein allergy, gastroesophageal reflux or lactose intolerance. Nonorganic causes may include tiredness, hunger, dirty diaper, over stimulation or an inability to self soothe due to delayed neuromaturation (Fisher et al., 2012).

Interpretation of infant crying is an excellent way to respond faster to infants needs and stop the crying. It's fairly easy when known what to listen for. When infants cry, it can get overwhelming — keep in mind that it won't last forever, and try to stay calm. Take a break when needing to and prioritize the needs once in a while when possible (Chen et al., 2019).

The best way to handle crying is to respond promptly to the infant crying. Mothers cannot spoil their infants by giving an attention. When responding to infants' crying, try to meet most basic needs first. If the infant is cold and hungry or diaper is wet, the mother should warm the infant, change wet diaper, and then feed the infant. If there's a shrieking or panicked quality to the cry, consider the possibility that a piece of clothing or something else is making uncomfortable. Perhaps a strand of hair is caught around a finger or toe (Johnson et al., 2015).

The ability of pediatric nurses to detect crying types and use appropriate comforting technique seems to be very important, not only for the infant's comforting but also in affecting parent's perceptions of standard of care. Pediatric nurses have a special role to play in the important post-partum days in helping the mother to comfort the crying infant. The mothers are often surrounded by professions and relatives who convey that the infants' crying is a normal part of parenthood (Zeifman et al., 2017).

### **Significance of the Study:**

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Up to 27% of parents describe problems with infant crying in the first four months. Parents can be concerned about the amount of time that their infant cries, how the infant can be consoled and disrupted sleeping patterns (Smarius et al., 2017).

Infant crying is one of the most common causes of Emergency Room visits during infancy and associated with adverse outcomes that compromise the infant's immediate and long-term physiologic stability and development (Joyce et al., 2019).

Excessive crying is the cause of 10% to 20% of all early pediatrician visits of infants aged 2 weeks to 3 months. 5% of crying infants have organic causes that could be serious or life threatening if not diagnosed early (Akhnikh et al., 2014).

Crying conveys evidence about an infant's state and neurological health which, when carefully assessed, can provide diagnostic information for parents and clinicians. When crying is inconsolable or judged to be excessive, it can stress parents, disrupt parenting and place an infant at risk for abuse (Zeifman et al., 2017).

Incessant crying beyond 3 months of age is associated with hyperactivity, cognitive deficits, poor fine-motor abilities and disciplinary problems when children reach 5 years of age (Ismail et al., 2017).

### **Aim of the study**

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The aim of the study is to assess the mothers' interpretation and care of their infants crying.

#### **Research questions:**

- 1- What is the mothers' interpretation of their infants crying?

2- What is the mothers' care of their infants crying?

### Subjects and Methods

#### Research Design:

A descriptive design was used to conduct the study.

#### Setting:

The study was carried out at Ash-moon Health Office in Menofia Governorate.

#### Subjects:

A purposive sample which included 200 mothers who attended in the previously mentioned setting for a six months period for children' care services such as vaccination and receiving artificial milk. The mothers were recruited to the study according to the following criteria:

#### Inclusion criteria:

Mothers have healthy infants from both gender and aging from birth to six months.

#### Exclusion criteria:

Mothers have infants with acute or chronic physical or mental condition.

#### Tools of data collection:

Data were collected using the two following tools:

#### Pre-designed Interview Questionnaire Sheet:

It was designed by the researcher after reviewing the related literature, it was written in simple Arabic language. It included the following two parts:

**Part I:** This part was concerned with:

- Characteristics of studied mothers which included age, level of education, marital status, occupation and residence.

- Characteristics of studied infants which included age, gender, ranking and types of feeding.

#### Part II:

This part was designed to assess the studied mothers' knowledge about interpretation of their infants' crying which consisted of 26 multiple choice questions included types, nature, times, its duration, causes, interpretation, methods for calming their infants' crying, maternal abuse in handling infants' crying and its complications.

#### Observational checklist:

It was adopted from relevant references to assess mothers' reported practices in care of their infants' crying; kangaroo care (7 steps) which was adopted from **Nirmala et al. (2012)**, different baby holding position (9 steps) which was adopted from **Kebede, (2014)**, holding a crying infant (5 steps) which was adopted from **Hamilton, (2015)**, swaddling (10 steps) which was adopted from **Hodder & Stoughton, (2017)**, infant bath (20 steps) which was adopted from **Bowden et al. (2003)**, bottle feeding (19 steps), diaper care (11 steps) which were adopted from **Skale, (1998)**, breastfeeding technique (9 steps) which was adopted from **Wambach, (2014)** and massage (18 steps) which was adopted from **Bainbridge et al. (2013)**.

#### ❖ Scoring system:

The observation checklists were filled by the researcher based on mothers' reported practices, each correctly done step was scored "1" and each step done incorrectly or not done was scored "0". The scores of the studied mothers were summed up and converted to percentage and accordingly, the total mothers' reported practices were categorized into two levels either adequate reported practices ( $\geq 60\%$ ) or inadequate reported practices ( $< 60\%$ ).

**Validity and Reliability:**

The developed study tools were tested and evaluated for their validity by group of three experts from pediatric nursing department, Faculty of Nursing, Ain Shams University. The experts' elicited regarding the format, layout, consistency, accuracy and relevance of the study tools. The developed study tools were modified according to the experts' opinion. Reliability of the designed study tools was done statistically by Cronbach's alpha test 0.85 for questionnaire and 0.95 for observational checklist.

**Ethical considerations:**

Ethical approval was obtained from the Scientific Research Ethical Committee of faculty of Nursing, Ain Shams University before starting the study. In addition, oral concept was obtained from each participant who agreed to share in this study. The participants were assured that anonymity and confidentiality and the right to withdraw from the study at any time would be guaranteed. Ethics, values, cultural background and believes were respected.

**Field work:**

The actual field work was achieved through a period of six months started from the beginning of May 2019 to the end of October 2019. The researcher was available three days/week (Sunday, Monday and Wednesday) in the previously mentioned setting throughout the morning shifts. The researcher interviewed individually the mothers who agreed to participate in the study. Each mother was motivated by baby oil, diaper and wipes funded by the researcher. In the first, the researcher explained the aim of the study to each mother; the questionnaire was filled in by the researcher where the time needed to fill in the questionnaire was ranged between 10-15 minutes. The reported practices were assessed by the researcher through asking the mothers to re-demonstrate

their practices. The time needed to fill each procedure was ranged between 3 to 5 minutes. The average time required to complete all checklists was ranged between 25-40 minutes.

**Results**

**Table (1):** shows that more than one third (38.5%) of studied mothers aged from < 25 years and 85% of them were married. Additionally, this table reveals that more than one third (37%) of studied mothers had university education and more than half (51%) of them were from rural area.

**Table (2):** shows that less than half (40%) of studied infants aged from 16-24 weeks and more than half (51%) of them were girls. Additionally, this table reveals that less than one third (31%) of studied infants were ranked as second child.

**Figure (1):** shows that 75.5% of studied mothers had poor knowledge regarding interpretation of their infants' crying. While 17.5% and 7% of them had good and average knowledge respectively.

**Figure (2):** Shows that about three quarter (75.5%) of studied mothers have inadequate total reported practices regarding care of their infants' crying while less than one quarter (24.5%) of them have adequate total reported practices regarding care of their infants' crying.

**Table (3):** Shows that there were highly statistically significance difference between studied mothers' knowledge, mothers 'age and educational level at p-value of 0.000 respectively. Additionally, this table reveals that there was statistically significance differences were observed between studied mothers' knowledge and their occupation. On other hand, no statistically significance differences were observed between

studied mothers' knowledge and their social status.

**Table (4):** Reveals that there were highly statistically significance difference between studied mothers' reported practices and their age.

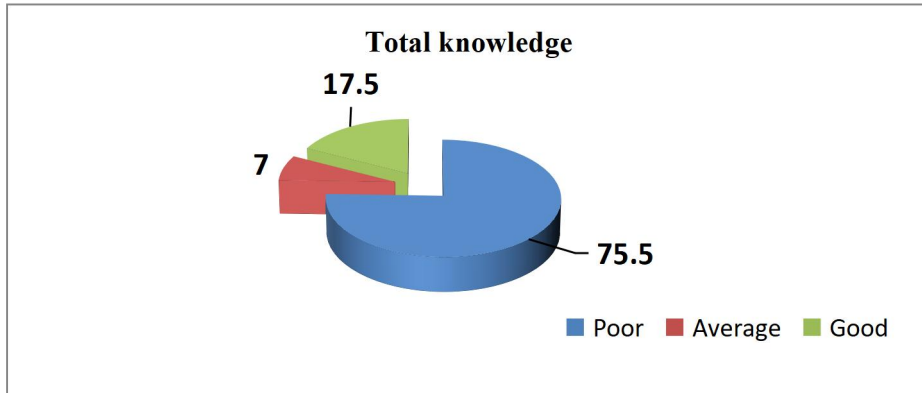
**Table (5):** Shows that there was positive correlation between mothers' total knowledge and their total reported practices.

**Table (1):** Distribution of the studied mothers according to their characteristics (n=200).

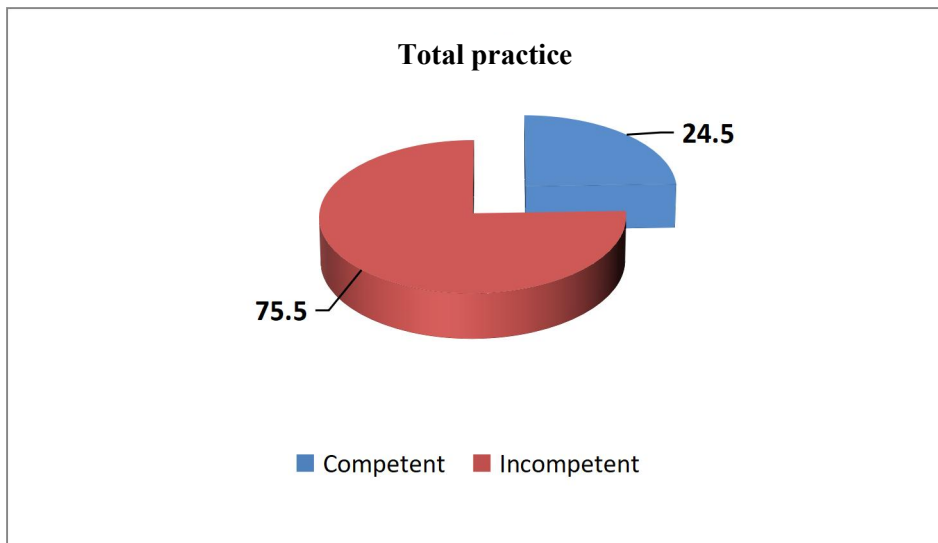
Mothers' characteristics	No.	%
<b>Age/years</b>		
< 25	77	38.5
25 < 35	72	36
35 ≤ 45	51	25.5
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X±SD		28.25±7.10
<b>Marital status</b>		
Married	170	85
Divorced	21	10.5
Widowed	9	4.5
<b>Educational level</b>		
Illiterate	12	6
Read and write	21	10.5
Primary education	25	12.5
Secondary education	23	11.5
Technical education	45	22.5
University education	74	37
<b>Occupation</b>		
Working	89	44.5
Not working (housewife)	111	55.5
<b>Residence</b>		
Rural	102	51
Urban	98	49

**Table (2):** Distribution of the studied infants according to their characteristics (n=200).

Infants' Characteristics	No.	%
<b>Age per weeks</b>		
< 8	55	27.5
8 < 16	65	32.5
16 ≤ 24	80	40
-		
X±SD		12.24±6.57
<b>Gender</b>		
Boys	96	48
Girls	104	52
<b>Ranking</b>		
First	58	29
Second	62	31
Third	42	21
Forth	15	7.5
Fifth	23	11.5



**Figure (1):** Percentage distribution of studied mothers according to their total knowledge regarding interpretation of their infants' crying.



**Figure (2):** Percentage distribution of studied mothers according to their total reported practices regarding care of their infants' crying.

**Table (3):** Relation between knowledge& demographic characteristic among studied sample (n=200).

Mothers' characteristics	Mothers' knowledge						X <sup>2</sup>	P value
	Poor		average		Good			
	No	%	No	%	No	%		
<b>Age in years</b>								
< 25	69	89.6	0	0	8	10.4	34.75	0.000**
25 < 35	46	63.9	14	19.4	12	16.7		
35 ≤ 45	36	70.6	0	0	15	29.4		
<b>Social status</b>								
Married	124	72.9	14	8.3	32	18.8	5.493	0.24
Divorced	18	85.7	0	0	3	14.3		
Widowed	9	100	0	0	0	0		
<b>Educational level</b>								
Illiterate	12	100	0	0	0	0	50.47	0.000**
Read and write	18	85.7	3	14.3	0	0		
Primary education	21	84	4	16	0	0		
Secondary education	21	91.3	1	4.35	1	4.35		
Technical education	37	82.2	4	8.9	4	8.9		
University education	42	56.8	2	2.7	30	40.5		
<b>Occupation</b>								
Working	72	80.9	8	8.98	9	10.1	6.52	0.038*
Housewife	79	71.2	6	5,4	26	23.4		
<b>Place of residence</b>								
Rural	82	80.4	8	7.8	12	11.8	4.78	0.091
Urban	69	70.4	6	6.1	23	23.5		

\* Statistically significant (p &lt; 0.05)

\*\* High significant (p &lt; 0.001)

**Table (4):** Relation between reported practice& demographic characteristic among studied sample (n=200).

Mothers' characteristics	Mothers' practice				X <sup>2</sup>	P value
	Inadequate		Adequate			
	No	%	No	%		
25 < 35	71	92.2	6	7.8	22.045	0.000**
35 ≤ 45	51	70.8	21	29.2		
	29	56.9	22	43.1		
<b>Social status</b>						
Married	125	73.5	45	26.5	2.928	0.231
Divorced	19	90.5	2	9.5		
Widowed	7	77.8	2	22.2		
<b>Educational level</b>						
Illiterate	12	100	0	0	9.461	0.092
Read and write	16	76.2	5	23.8		
Primary education	16	64	9	36		
Secondary education	18	78.3	5	21.7		
Technical education	38	84.4	7	15.6		
University education	51	68.9	23			
<b>Occupation</b>						
Working	70	78.7	19	21.3	0.861	0.410
Housewife	81	73	30	27		
<b>Place of residence</b>						
Rural	79	77.5	23	22.5	0.428	0.622
Urban	72	73.5	26	26.5		

\*\* High significant ( $p < 0.001$ )

**Table (5):** Correlation between total knowledge and total reported practices of studied mothers regarding interpretation and care of their infants' crying.

Parameters	Mothers' practice	
	r	P
Mothers' knowledge	0.553*	0.001

\* Correlation is significant at the 0.01 level (2-tailed).

## Discussion

Infants are almost entirely dependent on caregivers to meet their needs. Consequently, infant crying can assume an important role in ensuring the survival, health and development of the infant (Rabbitt et al., 2018).

Infant excessive crying and fussing has been linked to adverse maternal outcomes such as increased depression and stress, decreased feelings of parenting self-efficacy, and affected on mother's interpretation of crying behavior (Groisberg et al., 2020).

Regarding the characteristics of the studied mothers the findings of the current study revealed that more than one third of studied mothers aged from >25 years and had university education. These findings were in agreement with the findings of Kelly et al. (2017), who reported that the age of the studied mothers was >25 years and more than half of them had university education.

Concerning the characteristics of the studied infant (Table 2), the findings of the present study showed that two fifth of studied infants aged from 16-24 weeks and more than half of them were girls. These findings were supported by the findings of Bailhache et al. (2019) who said that the most of the studied children aged 24 weeks and the girls were more than boys

Regarding the total knowledge regarding interpretation of their infants' crying, Figure (1), the findings of the current study showed that the most of

studied mothers had poor knowledge regarding interpretation of their infants' crying. These findings were in agreement with the findings of Ornstein et al. (2016) who reported that the most of the studied mothers had poor knowledge before intervention. Also This results were in accordance with Leerkes et al. (2010) who studied and reported that the most of the studied parents had poor awareness about infant crying.

Concerning total practices of mothers regarding care of their infants' crying, Figure (2), the present study showed that about three quarter of studied mothers have inadequate total reported practices regarding care of their infants' crying while less than one quarter of them have adequate total reported practices. These findings were in agreement with the findings of Shrestha et al. (2013) who reported that the most of studied mothers had poor practices regarding infant's care.

This may be related to that poor knowledge of the studied mothers and absence of educational program related to care of infant crying. Also these findings were in agreement with the findings of Sakelo et al. (2020) who reported that the most of the studied mothers had unsatisfactory practices regarding care of their infants' crying.

Regarding the relation between knowledge & demographic characteristic among studied sample, Table (3), the findings of the current study clarified that there were highly statistically significance difference between studied mothers' knowledge, mothers' age and educational level at p-value of 0.000 respectively.



These findings were in agreement with the findings of **Sabitha, (2016)** who reported that the demographic variables like age, education, and the parity are associated with total knowledge score. Also these findings were in agreement with the findings of **El Sayed & Mahmoud, (2020)** who reported that there were highly statistically significance difference between studied mothers' knowledge, and the socio-demographic data.

Concerning the relation between studied mothers' characteristic & practice regarding Care of their infants' crying result, Table (4), the current study illustrated that there were highly statistically significance difference between studied mothers' practice and age at p-value of 0.000. These results came in the line with **Mann et al. (2015)** who reported that the mothers practices had statistically significance with their age.

The current study also revealed that there were statistically significance differences were observed between studied mothers' practice and educational level at p-value 0.092. These results were supported by **Van Ijzendoorn & Hubbard, (2000)** who reported that there were positive relationship between the educational level of the mothers and their practices regarding managing of infant crying.

Regarding the correlation between total knowledge and total reported practices of studied mothers regarding interpretation and care of their infants' crying, Table (5), the current study showed that there is positive correlation and statistically significance difference between mothers' total knowledge and their total reported practices. These findings were in agreement with the findings of **Ornstein et al. (2016)** who reported that were a statistical significance differences between mothers knowledge and practices. In addition these findings supported by **Sabitha, (2016)** who reported that there

was a positive correlation between the knowledge and practice. Also these results were confirmed by **Van Ijzendoorn & Hubbard, (2000)** who studied and reported that there were positive correlation between mothers knowledge and practices regarding infant care.

### Conclusion

In the light of the current study results, it can be concluded that, almost three quarter of the studied mothers had poor total knowledge and inadequate reported practices regarding the interpretation and care of their infants' crying.

### Recommendations

**Based on the findings of the present study findings, the following recommendations are suggested:**

- Provide nursing education for mothers at Health Offices to improve their knowledge about infant crying, interpretation and maternal care of infant crying.
- Provide new mothers with appropriate knowledge to prevent maternal abuse in handling crying of their infants and risks as shaking baby syndrome.
- Provide health teaching programs to mothers and families for raising their awareness about interpretation and care of their infants' crying.

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