

BREASTFEEDING RESEARCH

Knowledge About Breastfeeding in Mothers of Infants With Gastroesophageal Reflux

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Infants with gastroesophageal reflux disease (GERD) who are breastfed have significantly shorter clinical episodes of the condition than artificially fed infants. The purpose of this study was to identify the knowledge about the benefits of breastfeeding in mothers of babies 0-12 months of age with gastroesophageal reflux. A non-probabilistic sample was taken among patients from various private radiological centers. Sixty mothers completed a self-administered questionnaire, with a median age of 26 years and an educational level of 14 years. Seventy one percent breastfed their last baby, but only 18.6% practiced exclusive breastfeeding. The

pediatrician suggested formula to 53.3% of the mothers, and 64% of the mothers were told to combine breast milk with vegetables as treatment for the GERD. Inadequate knowledge about the benefits of breastfeeding was exhibited by 27% of the mothers. Mothers of infants with GERD need education on the importance of breastfeeding. Further research is necessary on the factors which impact the duration of breastfeeding in this population.

Key words: Breastfeeding, Knowledge, Gastroesophageal reflux

Gastroesophageal reflux disease (GERD) in infants was a medical problem rarely mentioned fifty years ago. During the last decade, however, it has been one of the frequent complaints of infants' parents (1). GERD is a medical condition in which the acid stomach contents regurgitate back into the esophagus. Babies frequently have an immature lower esophageal sphincter, allowing stomach contents and acid back into the esophagus. This is a problem if the regurgitation causes painful irritation or damage to the esophagus, interferes with feeding and sleeping, and/or contributes to respiratory problems (2). Infants with GERD have shown to be significantly more demanding and difficult with feeds and their mothers report significantly more negative feelings, significantly less enjoyment of feeds and infants with more crying behavior (3).

Lawrence stated that breastfed babies suffered fewer episodes of GERD and in many occasions these episodes are asymptomatic (4). Heacock et al found that breastfed

neonates demonstrated GERD episodes of significantly shorter duration than the formula-fed neonates. They also found that the breastfed neonates had significantly lower esophageal pH values than formula-fed neonates. This lower esophageal pH is more likely to stimulate peristalsis and, therefore, more rapid gastric emptying causing shorter episodes of reflux in breastfed neonates (5). Newman also postulates that when the infant is allowed to be on the breast for as long as he demonstrates interest in sucking, this produces small waves of muscle contractions in the esophagus which prevent reflux (6).

Due to the positive impact that breastfeeding could have on the health and behavior of infants with GERD, this study has the objective of identifying the knowledge about breastfeeding in mothers of infants diagnosed with GERD.

Methodology

A descriptive cross-sectional design was used to carry out the study. A non-probabilistic sample was selected by a pediatric gastroenterologist. A self-administered questionnaire was designed made up of 26 premises or questions divided into 4 parts. The first part was directed at obtaining general information about the mother and her baby. The second part meant to obtain information

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about the mother's exposition to breastfeeding education during her pregnancy. The third part sought information on the mother's part regarding gastroesophageal reflux. The fourth part collected information about knowledge on the benefits of breastfeeding.

The questionnaire's content was validated through experts' opinions, as well as through mothers of children diagnosed with GERD. The study was authorized by the Institutional Review Board of the Medical Sciences Campus. For purposes of analysis, adequate knowledge on the benefits of breastfeeding was defined as obtaining a correct answer in at least 70% of the questions. Descriptive statistics were used, as well as t-Mann-Whitney and Fisher tests for data analysis.

Results

The median age of participating mothers was 26 years (sd=5.84) with a range between 15 and 41. It was found that 51.6% of the participants were between 20 and 29 years of age, followed by 38.4% who were 30 years or older. The remaining mothers (10%) were 19 years old or younger.

With regards to education, the median of completed school years was 14 (sd=3.32), with a range between 3 and 20. Over three-fourths of the participants (77.2%) had 13 years or over of completed school years, while 14.0% had 9 or fewer years. The remaining 8.8% had between 11-12 completed school years.

The median number of living children was 2 (sd=1.04) with a range between 1 to 6. An only child was reported by 40.0% of the participants, 38.3% had two children and the remainder (21.7%) had three or more children. Regarding the age of the youngest child, the median was 4 months (sd=3.92) with a range between less than one month and twelve months. Specifically, 38.3% had between 0 and 3 months of age (Table 1).

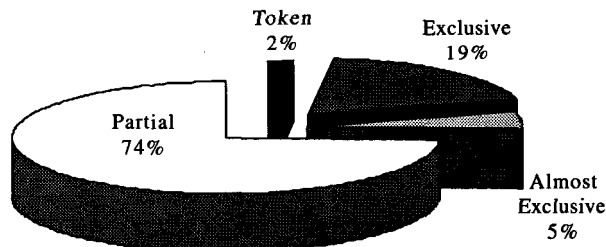
Table 1. Participant Baby's Age (in months)

Age (months)	n	%
<1	3	5.0
1-3	23	38.3
4-6	12	20.0
7-9	10	16.7
10-12	12	20.0
Total	60	100.0

Breastfeeding or having breastfed the most recent baby was reported by 71.7% of participants, while 28.3% reported the contrary. Among those who had breastfed or were still breastfeeding their most recent baby, 74.4% were

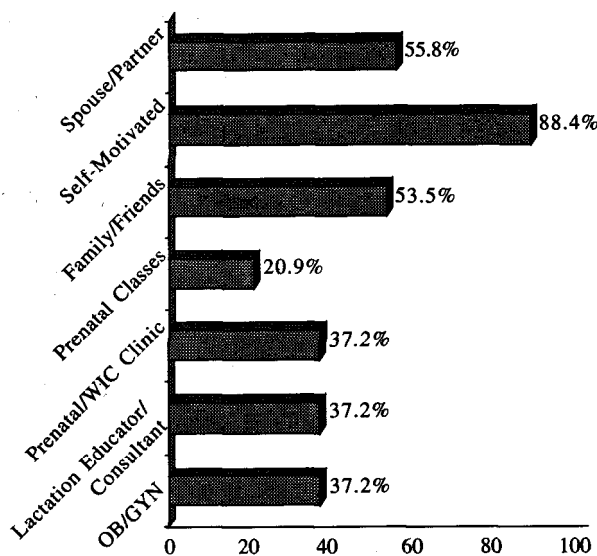
breastfeeding partially, while 18.6% were breastfeeding exclusively for the first six months.

Figure 1. Type of Breastfeeding (n=93)



Mothers who were presently breastfeeding or had breastfed their last baby, said they had decided to do so prior to the pregnancy (69.8%), during the pregnancy (23.3%), and only 6.9% decided to breastfeed after delivery. The vast majority (88.4%) stated the decision was made on their own initiative.

Figure 2. What/Who Motivated Mother to Breastfeed?.



Note. More than one source could be given

It is worth mentioning that mothers who stated they had not breastfed their last baby made that decision for one of the following reasons: their job, prior negative experience, mastitis, the presence of bacteria in the milk, inverted nipples, the baby was not satisfied, insufficient milk production, reflux, allergies, thyroid disease, the baby rejected the breast, post partum problems, cigarette smoking and breasts cysts.

Information and education about breastfeeding. Two thirds of the participants (66.7%) stated they had received information about the benefits of breastfeeding during their prenatal visits, while 33.3% stated the opposite. Likewise, 51.7% stated they had received education on how to carry out the process of breastfeeding during their prenatal visits, while 48.3% stated the opposite. It was found that 56.7% had received education on latching and correct breastfeeding during the postpartum hospital stay, while 43.3% stated the opposite.

Table 2. What/Who brings to the mother information about the benefits of breastfeeding

Source	n	%*
OB/GYN	17	28.8
Lactation Educator/Consultant	26	44.1
Prenatal/WIC clinic	31	52.5
Hospital	33	55.9
Newspaper/Magazines/Radio	28	47.5
Breastfeeding classes	22	37.3
Family/Friends	28	47.5
Other	08	13.6

Note. (*)More than one source of information could be given

Among those who stated they had received information on the benefits of breastfeeding, it was found that 55.9% received this information in the hospital while 52.5% received the information in the WIC Program (Table 2).

Eighty five percent of the participants knew about GERD, while 15% did not. Stated frequent symptoms of GERD included colic (72.9%) and frequent vomiting (69.5%). Other reported symptoms included choking, constipation, gas, hiccups, milk intolerance, grimace, straining, excessive crying and excessive salivation.

On questioning the mother on the causes of GERD, the most frequent answer was stomach and esophagus irritation (70.9%), followed by stomach valve problems (65.5%). Allergy to formula was stated by 56.4% of the mothers while 29.1% felt it was due to foods ingested by the mother while breastfeeding.

Recommendations by the pediatrician. Orientation from the pediatrician on the benefits of breastfeeding was received by 61.7% of the mothers, while 38.3% received no such orientation. It is worth mentioning that the mother's last pediatrician suggested artificial milk as the feeding strategy for the baby in 53.3% of the cases while 46.7% did not. The pediatrician suggested mother's milk and vegetables as treatment for GERD in 64.4% of the participants, while 35.6% did not. The pediatrician suggested vegetables and artificial milk as treatment for GERD for 62.7% of the participating mothers while this

advice was not offered to 37.3% of the mothers. With regard to the use of medication, it was found that only 44.1% of the babies received such a prescription, while no medication was prescribed to 55.9%.

Knowledge about the benefits of breastfeeding. Among study participants, 96.7% think that mother's milk is better than artificial milk. With regards to knowledge about the benefits of breastfeeding, 73.3% had adequate knowledge and 26.7% had inadequate knowledge. Premise analysis showed that:

- 100% know that breast milk offers benefits to the baby.
- 98.3% know that breast milk offers benefits to the mother.
- 45.0% ignore that breast milk provides environmental benefits.
- 28.3% ignore that breast milk provides benefits to the family.
- 95% know that breast milk is beneficial to the economy.
- 93.3% know that breast milk protects the baby against allergies.
- 93.3% know that breast milk protects the baby against gastrointestinal diseases.
- 98.3% know that breast milk provides the baby with immunologic benefits.
- 83.3% know that breast milk protects the baby against respiratory illnesses.
- 21.1% ignore that breast milk helps the baby with intellectual development.
- 40.0% ignore that breastfed babies have less chance of developing juvenile diabetes.
- 31.7% ignore that breastfeeding aids the mother in the management of stress.
- 95.0% know that breastfeeding helps the mother to return to her ideal weight quickly.
- 23.3% ignore that breastfeeding helps to prevent breast cancer.
- 53.3% ignore that breastfeeding helps to prevent osteoporosis in women.
- 100% know that breastfeeding helps to develop a better relationship between mother and child.
- 50.0% ignore that breastfeeding, adequately followed, can be a contraceptive method.

Inferential analysis. This study found no significant differences/associations between knowledge about the benefits of breastfeeding and the age of the participant ($Z_{m-w} = -0.88, p=0.14$); education ($Z_{m-w} = -0.88, p=0.41$);

breastfed children ($Z_{m-w} = -0.34, p=0.73$) and type of breastfeeding ($X^2_{fisher}(1)=0.04, p=0.99$).

Discussion

Knowledge is the acquaintance with or understanding of a science, art, or technique (7). The knowledge about benefits of breastfeeding has been associated as essential for the practice of breastfeeding (8). However, many other factors have been also identified with the initiation and duration of breastfeeding such as: knowledge about myths, hospital technical assistance and pediatrician's recommendations about breastfeeding, among others (9,10). Although almost three fourths of the participants demonstrated an adequate knowledge about the benefits of breastfeeding and almost all perceived that breast milk is better than formula, less than three fourths practiced breastfeeding of some kind and less than one fifth indicated that their baby received only breast milk during the first six months.

One third of the mothers stated they did not receive information about the benefits of breastfeeding and nearly half of them did not receive education about the breastfeeding process during prenatal care. Only three fifths of the mothers stated that they received education about positioning and breastfeeding techniques during the hospital stay. The American Academy of Pediatrics (AAP) breastfeeding policy and the federal government's Department of Health and Human Services' (HHS) Blueprint for Action on Breastfeeding stress the importance of providing knowledgeable and skillful counseling to women about breastfeeding and lactation during the prenatal and postnatal periods (10, 11).

Most of the reasons given by the mothers for not breastfeeding were not valid and many reflect ignorance about the process of breastfeeding and probably lack of social support, help and counseling about breastfeeding. Mastitis, thyroid problems, inverted nipple, low milk supply and baby not satisfied, are all situations that should not prevent or impede breastfeeding initiation if the mother has received accurate information and assistance (11). Having a baby with GER was one of the reasons for not breastfeeding although infants with gastroesophageal reflux have less frequent and severe episodes, as reported in the scientific literature. (4, 5).

Although over ninety percent of the breastfeeding mothers had the intention and made the decision to breastfeed before the baby's birth, more than half of them received recommendation from their pediatricians to use artificial milk as a way to feed the baby, and close to two thirds of the mothers received advice from the pediatrician recommending the mixing of vegetables and human milk

as treatment for the gastroesophageal reflux in their infants. Both practices are against the experts' recommendations for breastfeeding promotion and the treatment of GER in breastfed babies (6, 11).

It is necessary to educate mothers of infants with GER about the importance of breastfeeding. We must study the factors associated with breastfeeding duration in this specific target population. The national and international policies to promote breastfeeding cannot be effective until aggressive strategies for the modification of medical, social, economic and cultural attitudes and practices that affect the success of these policies are established. (10, 11, 13, 14).

Resumen

Los infantes con reflujo gastroesofágico (GERD) que son amamantados presentan episodios de GERD de duración significativamente más corta que los infantes alimentados artificialmente. El objetivo del estudio fue identificar el conocimiento sobre los beneficios de la lactancia materna entre las madres de bebés de 0-12 meses con reflujo gastroesofágico. Se seleccionó una muestra no probabilística de pacientes de varios centros radiológicos privados. Contestaron un cuestionario autoadministrable 60 madres participantes, con una mediana de edad de 26 años y de escolaridad de 14 años. El 71% lactó a su último bebé pero sólo el 18.6% lo hizo exclusivamente. Al 53.3% de las madres el pediatra le sugirió que utilizara fórmula como medio de alimentación para el bebé y al 64% le sugirió que combinara vegetales con leche materna como tratamiento para el GERD. El 27% presentó un conocimiento inadecuado sobre los beneficios de la lactancia materna. Es necesaria la educación sobre la importancia de la lactancia materna a las madres de infantes con GERD. Se requiere estudiar los factores que inciden en la duración de la lactancia materna en esta población.

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