

Original Research Article

Knowledge about the relation between child growth and formula preparation at home among mothers

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ABSTRACT

Background: Human breast milk is considered to be the best source of infant nutrition. Extensive evidence has shown mother's milk contains a variety of bioactive agents that modify the function of the gastrointestinal tract and the immune system, as well as in brain development. Objective of the study was to evaluate the level of knowledge about the child growth and formula preparation, to assess the knowledge of the relation between failure of preparation proper formula and child growth complication.

Methods: This will be a community base cross section study collected from an online survey tool. The survey was distributed electronically through the SurveyMonkey.com website to all mothers age between (18 to 40) from June 1st, 2016 to July 1st, 2016. The criteria of the survey, to be collected from Mothers age between (18 to 40).

Results: In the study of knowledge about the child growth and formula preparation among mothers, we found only 20% of our targeted group learned the way of preparation from the pediatrician which indicates the requirements of more efforts from the side of health care physician. 50% of those who answered: "yes, we applied certain changes over the formula" the reason behind what they did was to help their children to gain more weight. In regard of over concentration of milk we asked about the way of preparation. The highest result was definitely wrong with answer: "I press over the scoop more than once, then adding it to the water 39.19%.

Conclusions: On the other hand we found a great acknowledgment when we asked about child's positioning during feeding. The majority said: "my child is always lying on his back, with my hand supporting his head" with percentage close to 82.22%.

Keywords: Bottle sterilization, Child growth, Cow milk, Child feeding, Formula preparation, Infant formula

INTRODUCTION

Human breast milk is considered to be the best source of infant nutrition. Extensive evidence has shown mother's milk contains a variety of bioactive agents that modify the function of the gastrointestinal tract and the immune system, as well as in brain development.¹ The safety and quality of infant milk, whether it is breast milk (BM) or infant formula (IF), are a major concern for parents and

public health authorities.² The World Health Organization recommends that infants should be exclusively breastfed for the first six month of life.¹ Nowadays Infant formula is intended as an effective substitute for infant feeding. Although production of an identical product to breast milk is not feasible, thousands of efforts have been taken to mimic the nutritional values of human milk for normal infant growth and development. Cow milk is the most commonly used as the base, with supplemental added to

better approximate the composition to human breast milk and to help to attain most of health benefits.¹ Interventions targeting healthy infant feeding practices should be tailored to the unique factors that may influence mothers' various feeding practices, taking into account motivational and social influences.³

As we know that each infant or child has special nutritional needs to maintain his growth and development. Breast feeding and synthetic formula both play a major role in child's immunity and overall health issues as well as the developmental milestones care givers are trying to provide the proper formula for the child, however sometimes there are lots of misunderstanding of the instructions provided in the formula. It is thought that it is attributed to the inexperience of how to take care of children especially in newly mothers or those who are not educated. "In a study was conducted in Sweden showed that "Low maternal education was associated with earlier introduction of complementary foods and less introduction during concurrent breast-feeding. Still, the results indicated exposure to fewer foods at 12 months in infants of mothers with low education". And never forget that general pediatrician and primary health care physician they are always on the first line contact with our targeted group sample. Hoping that by the end of our research they can deal with the major child issues which is related to poor nutritional outcomes in a healthy child.⁵

METHODS

It's a community base cross section study collected from an online survey tool. The survey was distributed electronically through the SurveyMonkey.com website to all mothers aged between (18 to 40) from June 1st, 2016 to July 1st, 2016. The criteria of the survey, to be collected from 150 of mothers in the above mentioned age in specific area "Riyadh city" Saudi Arabia.

The data was obtained by 2 part questionnaire about the personal data, and knowledge about the relation between child growth and formula preparation at home. Monkey's survey helped us on all the steps of analyses, So we send all the analyzed data to our paper directly.

RESULTS

1st question about preparations of the formula mothers took 72.85%. Introducing the bottle for their children 59.60% was direct after birth. Learning the way of preparation highest percentage was for the attached instructions with 49.33%.

Next, formula way of preparation and the choices were: press over the scoop more than once, then adding it to the water 39.13%. Changes over the formula to help my child to gain weight with 50.00%. Types of the extra added were Cerelac wheat and other cereals which represent 66.3%. Type of child's milk, see Table 1. When we asked about bottle's nipple soft with a small hole 55.70%.

Table 1: What kind of milk do you feed your child?

| Type of milk | Percentage |
|---------------|------------|
| Ready to feed | 8.67%. |
| Milk powder | 89.33% |
| Family's milk | 1.33% |

Position during feeding 82.22% answered laying on his back, with my hand supporting his head. Duration of storage See Table 2.

Bottle's sterilization by washing it with water and soap directly after my child finished it 44.67%.

Table 2: For how long do you mainly keep the formula bottles till next us.

| Duration of storage | Percentage |
|--------------------------------|------------|
| One to two hours | 44.00% |
| Four hours | 4.67% |
| More than 24 hours | 1.33% |
| Never keep it for the next use | 50.0%. |

DISCUSSION

In order to assist the level of knowledge about the relation between child growth and formula preparation at home, we asked the participants the following questions.

Preparations of the formula

The first question asked is " Who has the responsibility for preparing child's formula?"

The answers were the following; Mothers 72.85%, both parents 11.92%, Other family members 8.61% (eldest sibling, grandparents), baby sitter 3.31%. It shows clearly that the mother is the one who take the responsibility in preparing her child formula.

Introducing the bottle

When they asked about the time that they start introducing the bottle for their children 59.60% were direct after birth, and 22.52% after one month, while 7.28% started at the age of six months, and about 3.97% after one year of life.

Learning the way of preparation

Then, the next questions were asked "How did you learn or the one who's responsible the way of preparing milk formula" 20.0% goes to pediatrician and pharmacist, and 20.0% family and friends.

Highest percentage was for the attached instructions with 49.33%. 8.67% of the participants did it by themselves without any instructor (Figure 1).

Changes over the formula

First we asked them if they applied any changes over the formula way of preparation before and; 17.88% answered with yes and the rest no. Then we focused over those who answered yes by asking them "If you answered yes, Why?" The answers were the following: to make it more desirable for the baby 28.13%. To help my child to gain weight 50.00% and it's represent the highest percentage and about 15.63% of them applied changes because some of their friends and family members used it and the last answer "It's costly effective" reflects only 6.25%.

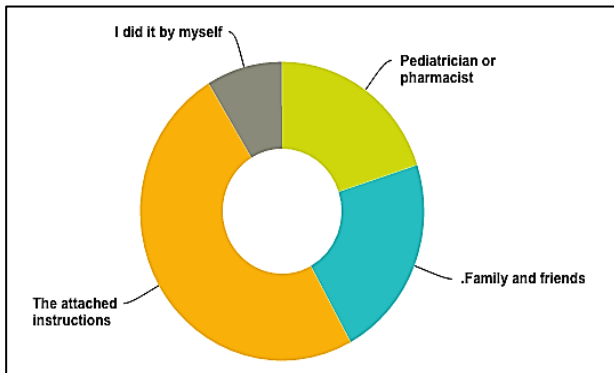


Figure 1: Learning the way of preparation percentages.

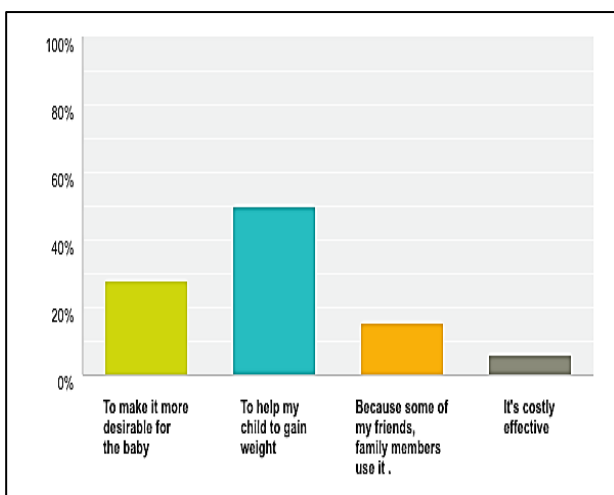


Figure 2: Changes over the formula showed the highest percentage "to help my child to gain weight" with 50%.

Types of the extra added

As we asked above about if they ever done some changes over the formula, we found it important to ask "Did you add anything extra to the milk bottle?" 34.0% of them answered yes, and 66.0% no. The next related question was "If you answered yes, give an example?" Cerelac wheat or other cereals represents 66.3%, while flavors like (Honey, sugar) took 7.55%. Mix it with other milk

brand with zero percent. Then medication or supplements like (vitamins, iron) with 26.42% which make it second most common extra added after the cereals.

Type of child's milk

"What kind of milk do you feed your child?" was the question, and answers were: Ready to feed 8.67%. Milk powder 89.33% on the top all types. Family's milk 1.33%, and finally no specific type with low percentage 0.67%.

Formula way of preparation

Regarding the previous question which carries a high percentage of the mothers who were answered with milk powder; "Choose the way of preparation that you follow" was after it, and the choices were: press over the scoop more than once, then adding it to the water 39.13%. I press over the scoop more than once, and then adding it to the bottle before water 7.79%. Adding the scoop without pressing to the water in the bottle 36.32%. And about 16.67% follow no specific way.

Bottle's nipple

According to the bottle's nipple we set numbers of choices that mainly describes the types of nipple which most of the time used. So, we asked: "Regarding the bottle's nipple it is always ...?" Soft with a small hole 55.70%, soft with a large hole 10.07%. When I'm feeding my child I try to keep the nipple not full of milk 6.04%, there is no specific type 28.19%.

Position during feeding

When the participants were asked "your child's position during feeding is always..?" 10.07% answered laying on his back. The majority answered laying on his back, with my hand supporting his head with percentage close to 82.22%. Sitting position about 1.34%, and laying over one position (lateral position) 5.37%.

Duration of storage

"For how long do you mainly keep the formula bottle till next use" was the question. Answers were 44.00% from one to two hours and for a period last to four hours 4.67% and a small number of participants were answer I can keep it for more than 24 hours with 1.33%. And it was clearly that most of them never keep it for the next use with percentage about 50.0% (Table 1).

Bottle's sterilization

"The incidence of infection with food borne pathogens is significantly higher in children under one year of age than in older age groups" a recent study Palermo, Italy.⁴ Depending on that we found it very important to ask about the way of sterilization. So our last question was focused over the ways of sterilization "How do you

sterilize the bottle and other instruments?" By washing it with water and soap directly after my child finished it 44.67%, by soaked it with water and soap for a minutes then wash it 7.33%. Washed it with soap then boiled it with water 34.00%. By steam sterilization or microwaves 14.00%.

CONCLUSION

Indeed the study showed that most of the mothers have the responsibility for child's formula preparation. So we should focus one educating this category especially during their first pregnancy. The overall study shows a good feedback, but to increase the level of awareness still we need lots of efforts as health care providers. Teaching them in how to make a proper formula is our aim, depending on child's age and weight. And never miss the point if the child is suffering from any chronic disease or other illness.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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