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Feda'a Al-Shatnawi
PhD Full Lecturer at Faculty of Nursing, Department of Midwifery and Newborn at Al Balqa'a Applied University, Hashemite Kingdome of Jordan

Hayat Abu-Shaikha
Assistant Professor, Faculty of Nursing, Philadelphia University, Hashemite Kingdome of Jordan

Laith Alosoufe
Assistant Professor, Faculty of Nursing, Jerash University, Hashemite Kingdome of Jordan

Wurood Al_Mazaydeh
Full Lecturer (Master degree), Faculty of Nursing, Jerash University, Hashemite Kingdome of Jordan

Corresponding Author:
Feda'a Al- Shatnawi
PhD Full Lecturer at Faculty of Nursing, Department of Midwifery and Newborn at Al Balqa'a Applied University, Hashemite Kingdome of Jordan

Improving exclusive breast feeding in the first twenty-four hours after birth: A quality improvement project

Feda'a Al-Shatnawi, Hayat Abu-Shaikha, Laith Alosoufe and Wurood AL_Mazaydeh

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Abstract
Background: Exclusive breast feeding was defined as the neonate receiving only breast milk, and nonhuman milk including milk formulas and no water.
Aim: to improve the proportion of exclusive breast feeding for full term, healthy, singleton neonate who delivered by C\S within the first 24 hours.
Design: Quality improvement project design was used in this study.
Subjects: The study sample composed all infants were delivered full term babies.
Setting: The study was conducted at the governmental hospital.
Tools: The project will follow the rapid cycle Plan-Do-Study-Act approach (PDSA) improvement model which is suitable for small scale changes, and provide ongoing test of change and revisions to the process.
Results: Improve the exclusive breast feeding of all included studies women.
Conclusions: We achieved positive results on the initiation of exclusive breast feeding.
Recommendations: PDSA model as a quality improvement methodology was very successful in changing attitude of health care providers and improving the rate of initiation of exclusive breast feeding.

Keywords: Breast feeding, a quality improvement project

Introduction

Breast feeding is the preferable form of feeding for all infants; this is due to its superiority over the synthetic formula in several characteristics such as probability of improving host defense, absorption of specific nutrients, its tolerance by infants and its significance participation of the neurological development of the infants (Purdy & Melwak, 2013) [14]. Breast feeding is beneficial not only to the infants, but also to the health of mothers as well as to the economy, and environment. Breast feeding can prevent 13% of infant mortality and reduce the sudden infant death syndrome by 36%. Furthermore, breast feeding reduces the health complications and the cost of treating these complications for both mothers and their infants. This is evidenced by that breast feeding could prevent 823 000 annual deaths in children younger than 5 years and 20 000 annual deaths from breast cancer. Lactation also reduces the economic cost of synthetic formula and their bottles in addition to that it is safe and environmentally friendly (Brahm and Valdes, 2017) [3].

Although the World health organization (WHO) recommends exclusive breast feeding for infants in the first six months after delivery (World Health Organization, 2011) [13], the adherence rate for this recommendation is low. In the middle and low income countries, the prevalence of exclusive breast feeding for the infants younger than 6 months is only 37% and the rate is lower in the high income countries. The rate in the Middle East-North African between 2000 and 2006 were 28% (UNICF, 2007) [15]. In Jordan, the prevalence of exclusive breast feeding -as recommended by the WHO- was only 1% in three major governorates and the average duration of exclusive breast feeding was only one month (Abuidhail *et al*., 2014) [15]. Early initiation of breast feeding is highly recommended, initiation of breast feeding is defined as "putting newborns to the breast less than 1 hour after birth" (Friedrich, 2018, P. 1097) [5]. Early initiation of breast feeding is an important start to life. It saves lives and provides long term health benefits. Delaying the early initiation of breast feeding can enhance the risk of neonatal infection and death. Early initiation rates varied widely across countries, ranging from 32% in East Asia and the Pacific to 65% in Eastern and Southern

Africa. Studies reported barriers to early initiation of breast feeding such as: Some health facilities follow outdated practices that separate mother and infants immediately after birth, making early initiation more difficult as well as some women have traditional beliefs that push them to discard the nutrient and antibody rich colostrums, therefore, newborns are fed honey, sugar water, or infant formulas, instead (Friedrich, 2018) [5].

In their study, ALdasoqi, Safadi, Badran, Jordan, Ahmed (2018) [16] examined the rate of initiation of breast feeding - in one private and one public hospital in Amman, Jordan- within the first 4 hours after birth, between 4 and 12 hours, more than 12 hours, and more than 24 hours. The rate was only 13%, 57.8%, 90% respectively which reflects low rate of BF initiation.

The sample composed of women, who delivered healthy, full term singleton infants. The inclusion criteria were healthy first-time postnatal mothers who received initial postnatal care in the first 24-48 hours after birth. The study concluded that mothers who initiated BF before discharge were older, employed, had normal vaginal birth and had undergone antenatal or after birth BF education. The optimal time of initiation is the first hour, but it is not investigated in this study. Upon my observation, it may difficult to the mothers to initiate BF as early as one hour related the fatigue and the tiredness after delivery for normal birth, however, the earliest the initiation, is the best for the mothers and their babies, thus, as health care providers, we aim to improve the early initiation of BF as much as possible. For the women who delivered by Cesarean Section (C\S), it is assumed that the initiation will be delayed related to the effect of surgery and medications to four hours or more, but at least, we can encourage women to early initiate the BF in the first 24 hours. Therefore, the purpose of this paper is to conduct a continuous quality improvement (CQI) project to improve the proportion of exclusive BF for full term singleton neonate during the first 24 hours after birth who were delivered by mothers through C\S in one governmental hospital.

Background information about the selected hospital

This hospital is one of the governmental hospitals in Jordan, it has 90 beds; twenty of them are in the antenatal and postnatal departments. There is no nursery in the hospital; therefore, the newborns who delivered through normal delivery are kept with mothers in the same room after birth and after providing the basic care in the delivery room. The newborns who delivered through C\S are sent to the Neonatal Intensive Care Unit (NICU) to provide basic care, in addition to bottle feeding and diaper change, and they remain there for two hours unless they need admission to the NICU. The setting in the hospital help the mothers to early initiate BF especially for the normal births due to the rooming in but for mothers who delivered via C\S, the situation is different and will be discussed through the paper (Jordan Ministry of Health, 2016) [8].

Implementation of the project using PDSA Model

Plan

The aim of this quality improvement project is to improve the proportion of exclusive breast feeding for full term, healthy, singleton neonate who delivered by C\S within the first 24 hours after birth from the existent baseline rate which is zero% to 75% within four weeks.

Exclusive breast feeding was defined as the neonate receiving only breast milk, and nonhuman milk including milk formulas and no water. The project conducted for four weeks, from November 18, 2018 December 16. Inclusion criteria for the infants were delivered full term babies. Very low birth weight neonates, neonates who require any kind of resuscitation or observation in NICU or respiratory support were excluded. The project will follow the rapid cycle Plan-Do-Study-Act approach (PDSA) improvement model which is suitable for small scale changes, and provide ongoing test of change and revisions to the process.

Project Selection

The project was selected to be a quality improvement project in this facility due to our observations and discussion with the staff. Although our organization is baby friendly hospital -in which that all neonates kept with their mother after providing the necessary care in the NICU-, the babies do not feed by their mothers especially who delivered by Cesarean Section. Based on the discussion with nurses and midwifes, it is impossible to the mother who delivered by C\S to breast fed their baby before 24 hours due to the prescription of Flagyl as an anti-microbial drug for them which is considered unsafe to the baby. While in other hospitals in Jordan, Al-dasoqi *et al*. found the rate was about 90% within 24 hours for both normally and C\S delivered women.

Organize the team

We formed a team comprising of the head nurses of the postpartum wards, pediatrician, obstetrician, and two pediatric residents working in the postpartum wards.

Clarify and understand the problem

In the first meeting, the team members brainstorming discussion conducted to find out the possible reasons of the increased rate of failure of mothers to exclusively breast fed their babies in the first hours after delivery. Root cause analysis identified four areas of defects; the areas are under the following titles (place, people, policy, and procedure). Concerning the place, there is no privacy for breast feeding due to overcrowding of the room by relatives in postnatal wards; accessibility of formula milk to nursing staff increases the failures for breast feeding. The problems related to people were knowledge gap among health care providers (nurses and physicians) regarding the need for exclusive BF. Lack of knowledge regarding Flagyl administration on the infants among nurses and physician. They assumed that flagyl is contraindicated for nursing mothers while the current evidences demonstrated that flagyl is category B, meaning that until now there is no studies confirmed the harmful effects on neonates Unawareness of feeding technique, positioning, and attachment among new nurses. Lack of manpower and the workload to attend with the mothers and provide teaching and support. Related to policy issues, there is no policy available on the initiation of exclusive breast feeding in the hospital. Defects under procedure were the written formula milk prescription for first few feeds after delivery by attending physicians. Lack of nursing documentation on the initiation of the breast feeding and the associated or encountered problems faced the mother during breast feeding her baby. Feeling the baby hungry by the nursing staff, and prescription of Flagyl as anti-microbial drug for

C\S deliveries. Fig 1 presents root cause analysis of poor initiation of exclusive breast feeding within the first 24 hours post C/S delivery.

Formulate the ideal state

The team agreed that the ideal state will be increasing the rate of initiation of exclusive breast feeding to 75% and increase the staff commitment to do so.

Derive the solutions

Suggested solutions by the team members were, to explain the technique of breast feeding personally for each mother using visual teaching materials. All nursing staff was expected to provide teaching and support to mother during the first few feeds. The teaching sessions must be documented in a special sheet in the file. All residents and pediatricians were expected to provide counseling and motivation to mothers to breast feed exclusively. No any formula except for medical condition and under prescription was emphasized. The initiation time will be documented on special sheet in the file. Moreover, all the problems that encounter the mothers during the initiation and feeding must be documented along with the action taken to solve the problem. Obstetrician were also encouraged to counsel all mothers antenatally regarding the benefits of exclusive breast feeding and requested them to address nipple problems with the mothers.

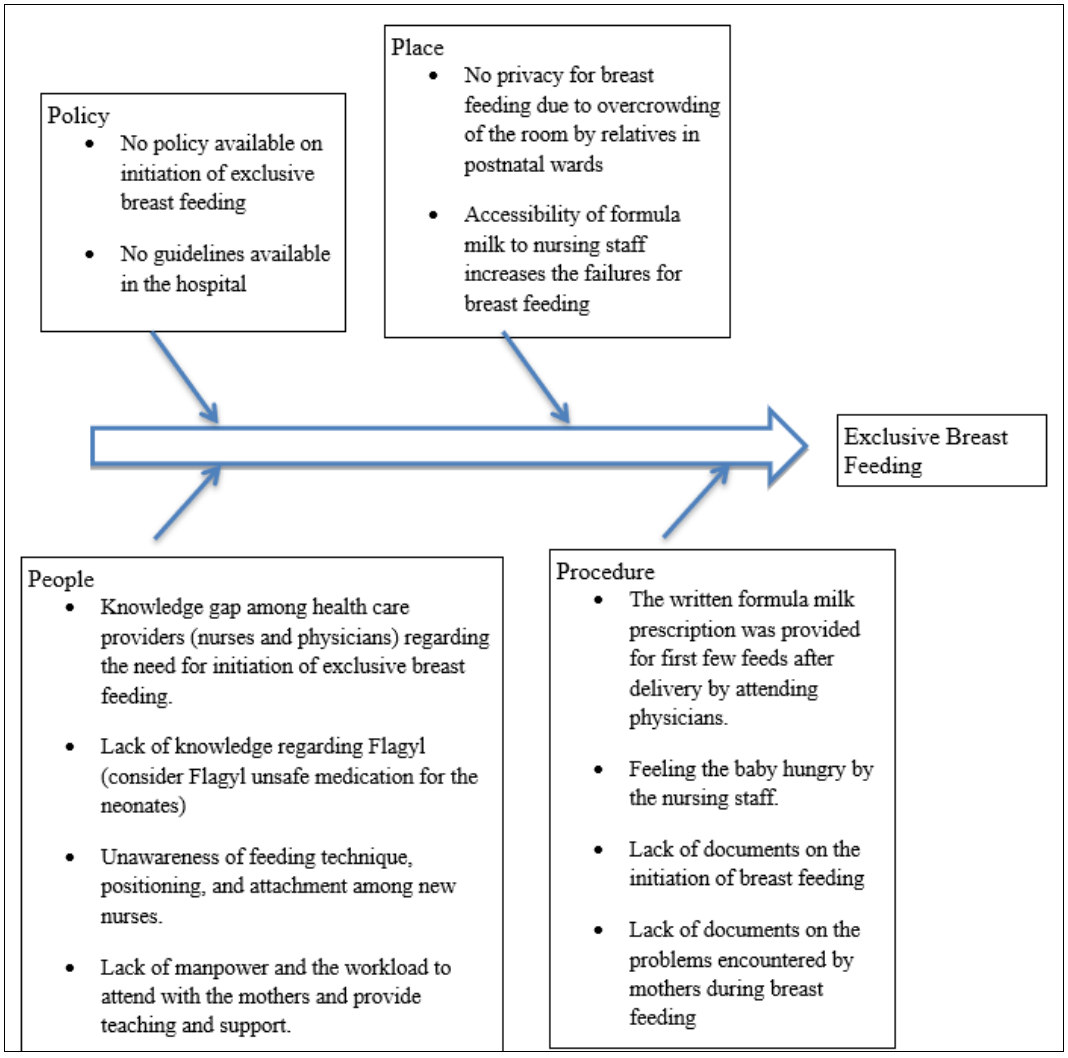

Fig 1: Fish bone analysis of poor initiation of exclusive breast feeding within the first 24 hours post C/S delivery.

DO

Implementation of the planned interventions conducted for four weeks. The nurses and physicians received educational sessions on Flagyl. They were taught that Flagyl is prescribed only for emergency C/S deliveries and it is not a contraindication for breast feeding. The team started to demonstrate to each mother the techniques, positioning of successful breast feeding. The staff was encouraged to start breast feed as soon as the baby sent to his mother. In the post-natal ward the mothers received explanations about the benefits of breast feeding and were supervised for effective breast feedings. Provision of formula milk was made more difficult through mandating signed prescription from the pediatrician to allow it. A policy on initiation of exclusive breast feeding was adopted from an educational hospital. A newly initiated form of documentation was distributed to the staff in the post-natal ward to document all relevant information concerning breast feeding. The Obstetrician started to educate pregnant ladies on breast feeding in the antenatal clinics.

Study

Throughout the four weeks' period, ongoing assessment of the project was conducted. Sharing of success stories and

positive feelings was enjoyed. However, there were some issues we found during our assessment inhibited exclusive breast feeding. These issues included difficult implementation due to inadequate nursing staff. Non adherence to breast feeding at night shift was noticed due to lack number of nursing staff who can attend with the mothers to help them in the process and non-adherence to documentation on the sheet.

Act

Continuous educational discussion conducted with the staff about the advantages of documentation of the initiation time and the associated problems encountered during breast feeding as this helps in solving the problems and maintain the success of the project. Engagement of the new staff was also emphasized during the education of the mothers on breast feeding. The team provided demonstration and supervision to all mothers on techniques, positioning and attachment during breast feeding. Any nurse provided formula milk during night shift was subjected to questioning and counseling. Educative poster was positioned in the postnatal ward to encourage mothers and family members to continue breast feeding process. Fig. 2

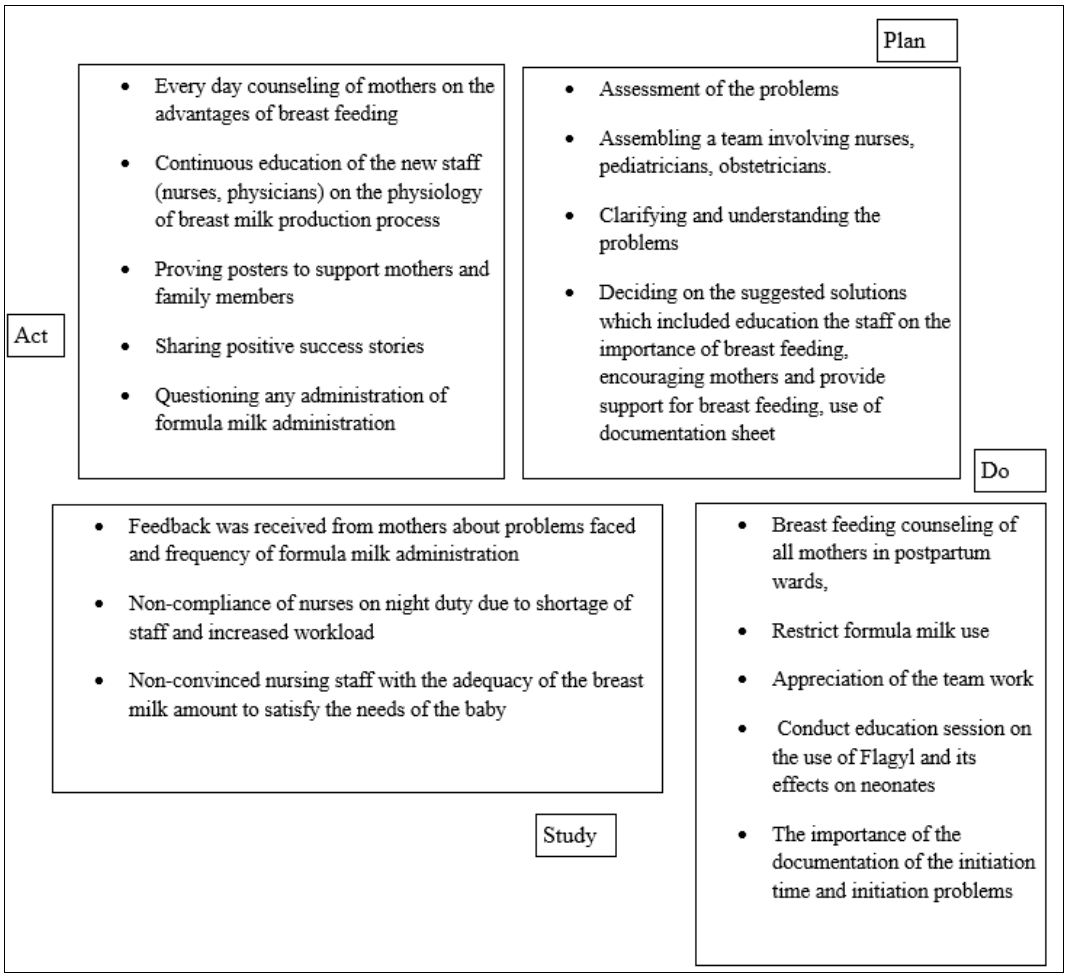

Fig 2: Plan-Do-Study-Act (PDSA) cycle intervention

Conclusion

We achieved positive results on the initiation of exclusive breast feeding. Analyzing the problem systematically and implementing interventions using PDSA model as a quality improvement methodology was very successful in changing attitude of health care providers and improving the rate of initiation of exclusive breast feeding.

Conflict of Interest

Not available

Financial Support

Not available

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