

Original Article**Evaluation of quality control circle Activities in improving the Delayed Cord Clamp Rate of Newborns during Vaginal Delivery and cesarean delivery**

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Abstract

Introduction: The Quality Control Circle (QCC) exercises in improving the delayed cord clamp rate (DCC) of infants going through vaginal conveyance. By setting up QCC group, to explore and analyze the problems of DCC rate of newborns undergoing vaginal delivery in our hospital therefore, to draw up our new target and the responding measurement.

Methods: It was a cross-sectional observational examination to assess the quality control over exercises in improving the delayed cord clamp rate. Infants going through vaginal and cesarean conveyance in each case were carried out at Women's medical college hospital, Sylhet from November 2020 to December 2020. Total 100 newborns undergoing vaginal delivery and C/S were enrolled for this study.

Result: During the study, according to cord clamp rate where the delayed cord clamp (DCC) rate was 40%. According to causes of failure to perform of delayed cord clam, 35% was obstetric nurse factors, followed by 20% cases maternal and their families disagreed, 25% cases maternal had intrapartum complications, 20% cases doctor factors.

Conclusion: After the implementation of Quality Control Circle activity, the delayed cord clamp (DCC) rate was significantly improved which indicate more newborns benefit during vaginal delivery and cesarean delivery. Quality Control Circle is an effective managing tool to promote the continuing improvement of medical quality and improve the implementation of the activity, the delayed cord clamp (DCC) rate which improved maternal and infant health and nutrition outcome. It makes brilliant results in both nursing technique and management.

Keywords: Delayed Cord Clamp (DCC), control circle, vaginal delivery, cesarean delivery.

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Introduction

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Delayed cord clamp (DCC), as late umbilical cord amputation, means to amputate the cord until the newborns have built up their stable respiration and the cord pulsation stopped. Delayed cord clamp does not additionally increase the incidence of undesirable maternal-and-Infant outcome.¹ Besides, compare with immediate cord

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ligation, delayed cord clamp can increase hemoglobin, hematocrit and serum iron level of newborns, in order to ameliorate their cardiovascular, cerebral, pulmonary system and nervous system development.²

Quality Control Circle is an effective managing tool to promote the continuing improvement of medical quality, it makes brilliant results in both nursing technique and management.³⁻⁵ In China, the Quality Control Circle is an imperfect technique, that it needs to be adapted to China's medical situation. Nowadays, in addition to obstetrics, other disciplines are beginning to accept the quality control circle, that they use the quality control circle to improve the efficiency and quality of care.⁶

our primary objective in this study is to assess the quality control hover exercises in improving the delayed cord clamp pace of infants.

Methodology

It was a cross-sectional observational study to assess the quality control circle activities in improving the delayed cord clamp rate. Vaginal and cesarean delivery of newborns undergoing in each case were carried out at Women's medical college hospital, Sylhet from November 2020 to December 2020. Total 100 newborns undergoing vaginal delivery and C/S were enrolled for this study. Maternal diseases: blood diseases like anemia, severe perinatal complication like placenta previa, placenta abruption, vasa previa bleeding, multiple pregnancy and Rh-negative mother, congenital anomaly of newborn infants like meningocele, congenital heart diseases and alimentary anomaly and premature infants were excluded from the study.

During the study, medical history was taken from the mother, with specific attention to risk factors and clinical history. Clinical examination and

laboratory investigations were carried out. We acquired knowledgeable assent from sound, term pregnant ladies, and enlisted them prenatally.

The Statistical package for social science SPSS version 23.0 was to performed Statistical analysis. A descriptive study was performed for clinical introduced as mean highlights and results were standard for quantitative versus and number variables (percentages deviation) for qualitative factors.

Result:

In figure-1 shows gender distribution of the baby where most of them were male, 60%. The following figure is given below in detail:

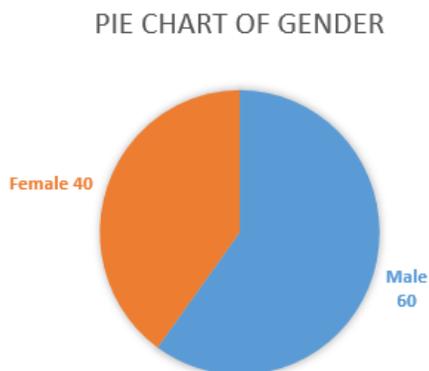


Figure-1: Gender distribution of baby

In figure-2 shows distribution of the study group according to cord clamp where the delayed cord clamp (DCC) was 40%. The following figure is given below in detail:

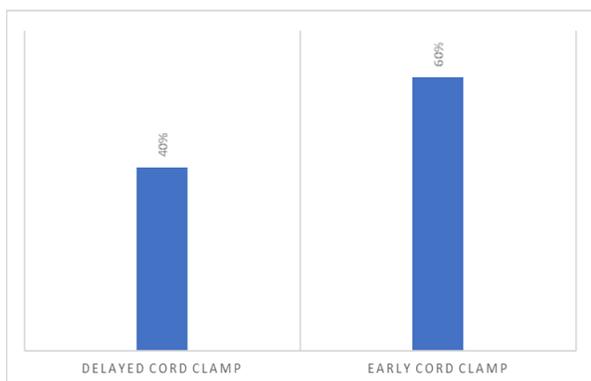


Figure-2: Distribution of the study group according to cord clamp rate

In table-1 shows causes of failure to perform of delayed cord clamp where 35% was obstetric nurse factors, followed by 20% cases maternal and their families disagreed, 25% cases maternal had intrapartum complications, 20% cases doctor factors. The following table is given below in detail:

Table-1: Causes of failure to perform of delayed cord clamp

Causes of failure	%	n
Obstetric nurse factor	35%	35
disagreed	20%	20
Maternal intrapartum complications	25%	25
Doctors factor	20%	20

In table-2 shows comparison of delayed cord clamp of newborn in vaginal and CS delivery before and after implantation of where after the

implementation of the QCC activity, the delayed cord clamp (DCC) of such newborns was significantly improved. The following table is given below in detail:

Table-2: Comparison of delayed cord clamp of newborn in vaginal and CS delivery before and after implantation of QCC

Before carry out QCC	%	n	After carry out QCC	%	n
The number of delayed cord clamp (DCC)	40%	40	The number of delayed cord clamp (DCC)	80%	80
Obstetric nurse factor	20%	40	Obstetric nurse factor	0	0
Maternal and their families disagreed	20%	20	Maternal and their families disagreed	10%	10
Maternal intrapartum complications	25%	25	Maternal intrapartum complications	15%	15
Doctors factor	20%	20	Doctors factor	0%	0

***multiple response was noted**

In figure-3 shows the incidence of related complications of parturient and newborns. After implementation of the activity, in 1.5% cases had incidence of postpartum hemorrhage and in 4% newborns had jaundice. The following figure is given below in detail:

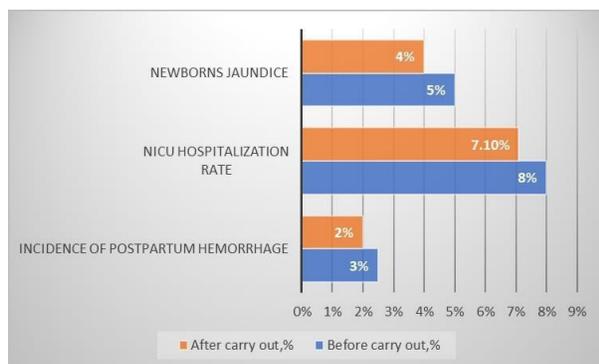


Figure-3: Incidence of related complications of parturient and newborns.

Discussion

Galel SA, Fontaine MJ. in their study shows that the usage of DCC prompted a decrease in the quantity of blood bondings given to VLBW newborn child at our facility. The findings of this study showed that delayed cord clamp levels of the newborn after vaginal delivery increased from 40% to 80%. In comparison, there were no major variations in the length of the third stage of labour, occurrence of postpartum hemorrhage, neonatal intensive care unit admittance, incidence of hyperbilirubinemia, and the incidence on neonatal asphyxia. By introducing systematic procedure, an obstetric nurse clarified the signs for delayed cord clamp, and developed a method. Neonatal blood transfusions conveys numerous dangers, counting liquid over-burden, necrotizing enterocolitis, and transmission of blood-borne microorganisms.⁷ DCC has been related with a decrease in the requirement for blood transfusions and increments in hematocrit values⁸⁻¹⁰. Much writing has been given to evaluating the transfusions that happens at the times following birth. Farrar et al. measured term children after birth with the string unblemished, indicating that an inexact 25 ml/kg placental transfusions happens.¹¹ Most of the placental transfusions happens in the initial 15 to 60 s after conveyance.^{12,13} Studies in preterm

sheep show that this placental bonding has numerous physiologic advantages, remembering less variety for pulse and carotid vein pressure.¹⁴ In the preterm populace that we considered, DCC decreases the requirement for transfusions intensely during their underlying hospitalization. In preterm and term newborn children, DCC diminishes the requirement for late bondings by lessening the frequency of iron insufficiency weakness. Despite the fact that upgrades in hemoglobin obsessions are more transient, patients accepting early cord clamping cinching have diminished iron stores and are twice as prone to be iron inadequate at three to a half year old enough.¹⁵

Our study identified that failure to perform of delayed cord clam where 35% was obstetric nurse factors, 20% cases maternal and their families disagreed, 25% cases maternal had intrapartum complications, 20% cases doctor factors.

The quality tasks that QCC nurses conduct strengthens the stability of inpatient obstetric nurse teams. The standard of on-site nursing care is not entirely dependent on the nurses. Only by incorporating and integrating medical services can the "patient centered" philosophy be brought to reality and support patients. In this quality management loop practice, our department has carried out the teaching of coordinated medical treatment, which not only increases the technical expertise of both sides, but also enhances the coordination and collaboration between the two sides, which helps the two sides to reach a consensus on the introduction of delayed umbilicus cutting for the newborn delivered through vagina, so as to ensure successful cooperation and avoid discrepancies.

Our study identified that newborn in vaginal and CS delivery before and after implantation of where after the implementation of the QCC activity, the

delayed cord clamp (DCC) of such newborns was significantly improved which is similar to other study. However, applying late cord clamping to reduced third stage of labour did not extend the procedure and raise the likelihood of postpartum hemorrhage. The NIH used the programming model in Jialei Feng and Andersson.

In one study also found in their study that, quality management circle activity increased obstetric nurse professional knowledge in this activity, the problem of insufficient knowledge for delay delayed cord clamp, joint department doctor, launched a related study, training, continuing education and training, provide obstetric nurse with professional knowledge growth space, use of learned knowledge and skills, use in the QCC, promote, in order to solve the difficulty of, also help to implement quality management circle activity.¹⁶

Conclusion

Conclusion: The main reason of failure to perform of delayed cord clamp were obstetric nurse factors, cases maternal and their families disagreed, maternal had intrapartum complications and cases doctor factors. After the implementation of Quality Control Circle activity, the delayed cord clamp (DCC) rate was significantly improved and complication decreased which indicate more newborns benefit during vaginal delivery and cesarean delivery. Quality Control Circle is an effective managing tool to promote the continuing improvement of medical quality and improve the implementation of the activity, the delayed cord clamp (DCC) rate which improved maternal and infant health and nutrition outcome. It makes brilliant results in both nursing technique and management. Therefore, we can say that delayed cord clamping can be effectively and securely executed utilizing quality improvement procedure

and by connecting with a multidisciplinary medical and research team.

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