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EFFECTIVE COUNSELING PROGRAM ON IMPROVING MATERNAL UMBILICAL CARE ON NEWBORNS

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ABSTRACT

Background: *Umbilical cord care was a concern for mothers, but now umbilical cord infection has been increasing in rural areas. Every year around the world, about 2.6 million newborns die, among them, sepsis accounts for 47% of the cause of umbilical cord. In Vietnam, the rate of neonatal infections accounts for 32%; Neonatal mortality rates are 3-4 times higher in mountainous and remote areas than in urban areas and in lowland areas.* ***Objective****: Determining rate of mothers 'knowledge, practice and change between mothers' knowledge and practices in umbilical care before and after the intervention.* ***Subjects and research methods:*** *The study used non-control intervention to evaluate the effectiveness of mother's umbilical care intervention program at home. Knowledge and practice will be assessed through self-fill questionnaires and umbilical care process according to guidelines of the Ministry of Health 2016, research conducted from 01/2019 to 07/2019 including 68 mothers after birth ≥ 24 hours and randomly assigned according to the obstetrics list, Hong Ngu General Hospital. Subjects must practice independent umbilical care before discharge.* ***Results:*** *The study results showed that the mother's knowledge and practice of umbilical care before counseling 2.9% (3 ± 2.15), after counseling 73.5% (7, 1 ± 1,3); There was a correlation between maternal umbilical cord care and practice on newborns.* ***Conclusion:*** *We affirm that this counseling program brings mothers' knowledge and confidence in the care of newborn navel at home. This helps prevent umbilical cord infection in babies.*

Keywords: *Umbilical cord, infection, solution, neonatal death, postpartum, guidelines.*

I. INTRODUCTION

Umbilical cord infection was common in the first month of the baby because the umbilical cord was the first place for bacteria to enter, causing serious complications that can lead to death. However, proper care of the umbilical cord can prevent its complications [1]. However, the care of the umbilical cord depends on the regional culture, only 68.9% of mothers had knowledge about neonatal umbilical care, practice knowledge was 82.01% and 8.26% of the mother agreed not to cover the umbilical cord [2]. According to statistics of the World Health Organization [3], umbilical infection rate accounts for 13-15% in countries around the world, 75% in countries had not developed, and there were differences in each country, in Pakistan was 4.5%, Canada 0.3%, China 18%, America 0.53%, Japan 0.09% [4], [3], [5]. In Vietnam, the rate of neonatal infections accounts for 32%; Neonatal mortality rates were 3-4 times higher in mountainous and remote areas than in urban areas and in lowland areas [6]. Therefore, this study had to help mothers had the knowledge and confidence in the proper practice of neonatal umbilical care at home.

II. MATERIALS AND METHODS

2.1. Participants: Mother after giving birth ≥ 24 hours at Hong Ngu Regional General Hospital from February 1, 2019 to July 1, 2019.

Selection criteria: Postpartum mothers have children living more than 24 hours at Hong Ngu Regional General Hospital from February 1, 2019 to July 1, 2019.

Elimination criteria: Mothers with neurological diseases; Children were malformed in the navel and the child is transferred to nursing infants

Location and time of study: Hong Ngu regional general hospital was a third-class hospital, near the Cambodian border. The hospital has 2 birth rooms, 1 obstetric and family planning clinic and other specialties. About the staff at the obstetrics department, there were 6 doctors, 2 bachelors and 20 midwives. The period was from February 1, 2019 to July 1, 2019.

2.2. Research Methods

Study design: Non-control intervention.

Sample size and sampling method: 68 mothers met the selection criteria for the study from February 1, 2019 to July 1, 2019. Participants will be assessed on knowledge and practice of neonatal umbilical care at 2 times before and after counseling by self-filled questionnaires; Practicing with the umbilical care process under the guidance of the Vietnamese of Health 2016 [1]. Subjects will be randomly grouped according to the list in obstetrics department, odd numbers will be selected in 1 group (4-5 people) and evaluated according to each step: *Step 1:* Evaluate knowledge through self-fulfilling questions according to Huynh Thi Duy Huong [7]; Umbilical care practice by model following the umbilical care process of the Ministry of Health [1]. *Step 2:* Guide knowledge education by small group presentations; Navel care practice through the model. *Step 3*: Re-evaluate knowledge through self-filled questionnaires; perform independent umbilical care on infants under the supervision of researchers.

Tool: Tool to evaluate the umbilical care process for children developed by researchers based on the national standard guidelines for reproductive health care in 2016 and essential care for mothers and children Newborn of the World Health Organization (WHO) in 2014 [1],[8]. The process consists of 8 steps, the way to calculate points for the

checklist according to a scale of 10. Each correct practice step was calculated 1 point. The caregiver must comply with ≥ 70% of the standard procedure but must not violate the sterile (non-touching) rule before being called to achieve the opposite was not achieved. The time for intervention was 45 minutes for a group of 4-5 mothers. Sample size: based on previous research, the percentage of mothers with proper umbilical care knowledge was 68.9%, but only 8.26% of mothers agreed to not cover the umbilical cord, we estimated that the target population needed The study plan was 63 people to estimate the ratio with 95% confidence intervals.

2.3. Data analysis

Analysis of the dependent variable on knowledge and practice of umbilical care of mothers according to the McNemar chi-square test and considering the relationship between knowledge and practice of using cascade tests. We use stratification to consider the relationship because we want to understand what mothers have a good knowledge of, the change in practice was different from the group of mothers who do not had good knowledge. Mothers' knowledge was assessed through self-fill questionnaires. According to research by Huynh Thi Duy Huong [7], the questionnaire consists of 2 parts, part 1 had 9 questions describing basic information of the mothers themselves, part 2 consists of 9 questions about knowledge of care Umbilical cord for babies. Score questions about knowledge: one correct answer per point, vice versa 0 points. Correct answer ≥ 75%: was reached and <75%: unsatisfactory.

Tool for evaluating the umbilical cord care process for children developed by researchers based on the Ministry of Health's national standard guidelines on reproductive health care for 2016 and maternal and newborn essential care World Health Organization (WHO) 2014 [1], [8]. The process consists of 8 steps, the way to calculate points for the checklist according to a scale of 10. Each correct practice step was calculated 1 point. The caregiver must comply with ≥ 75% of the standard procedure but must not violate the sterile (non-touching) was called reached and vice versa does not reach. Guided by a researcher and her colleague, a midwife at the Hong Ngu General Hospital. Subjects will be evaluated for umbilical care intervention at the umbilical care room of the obstetrics department of the Hong Ngu General Hospital, Dong Thap province. The time for intervention is 45 minutes for a group of 4-5 mothers.

III. RESULTS

3.1. General knowledge about navel care after birth

Table 1. Percentage of correct knowledge about navel care after birth before and after intervention.

Characteristic	Right knowledge			
	Before the intervention		After the intervention	
	Frequency	Rate (%)	Frequency (68)	Rate (%)
Correct knowledge rate	2	2.9	50	73.5
General knowledge points ($\bar{x}$±SD)	3 ± 2.15		7.1 ± 1.3	

Knowledge about after-birth umbilical cord care: found that the right knowledge rate of mothers participating in the study before the intervention accounted for 2.9% (average

score of 3 ± 2.15 points), after the intervention process thanks to in health education counseling, this rate has increased to 73.5% (average score of 7.1 ± 1.3 points).

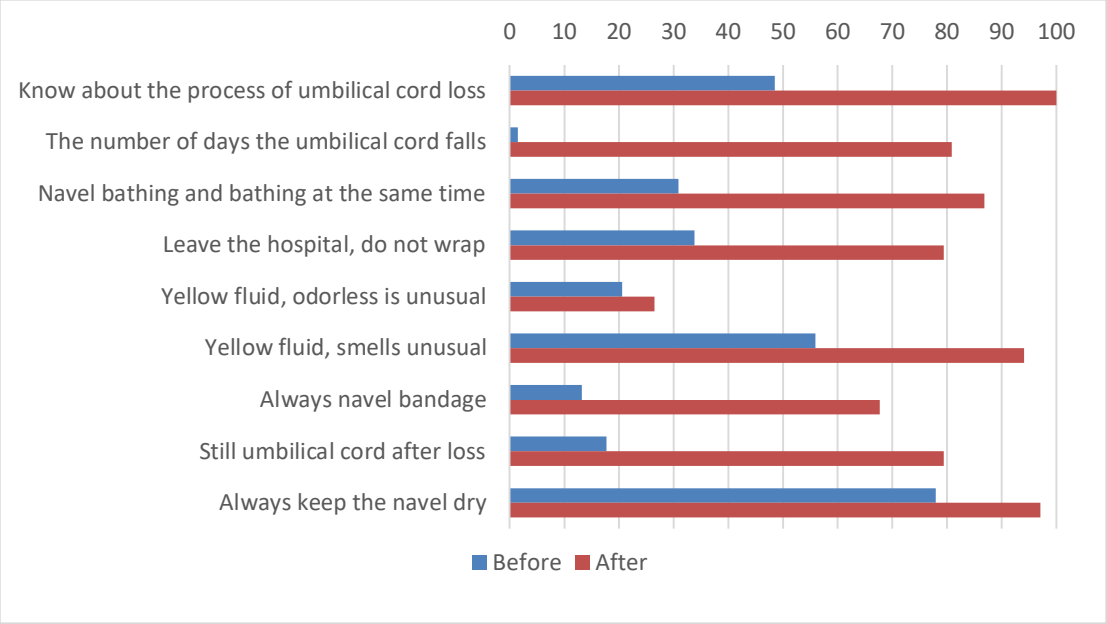

Figure 1. The rate of correct knowledge about navel care after birth before and after the intervention.

Before the intervention: Most of mothers had wrong knowledge about the number of days of umbilical cord loss, only one mother answered correctly, accounting for 1.5% of 68 participants. There are 38 people (55.9%) who know that when the umbilical cord had a yellow fluid, redness and bad smell appear to be abnormal. Mothers said that they should always keep the navel dry 53 people (this rate of correct answer accounted for 77.9%).

After intervention: The correct knowledge rate of mothers surveyed had changed like 55 mothers had known the right day of birth loss (80.9%). Recognizing abnormal signs of umbilical cord increased to 64 people (94.1%).

3.2. General practice on navel care after birth

Table 2. Proportion of correct practice on postpartum umbilical cord care before and after the intervention.

Characteristic	**Practice true**			
	Before		**After**	
	Frequency	**Rate (%)**	**Frequency (n=68)**	**Rate (%)**
The correct practice rate	7	10.3	64	94.1
General practice points ($\bar{x}$±SD)	3.6 ± 2.5		8.2 ± 1.2	

The practice of postpartum umbilical care of mothers participating in the study found that the right practice rate before intervention accounted for 10.3% (average score of 3.6 ± 2.5 points), after the intervention process. By health education consultancy, this rate has increased to 73.5% (average score of 8.2 ± 1.23 points).

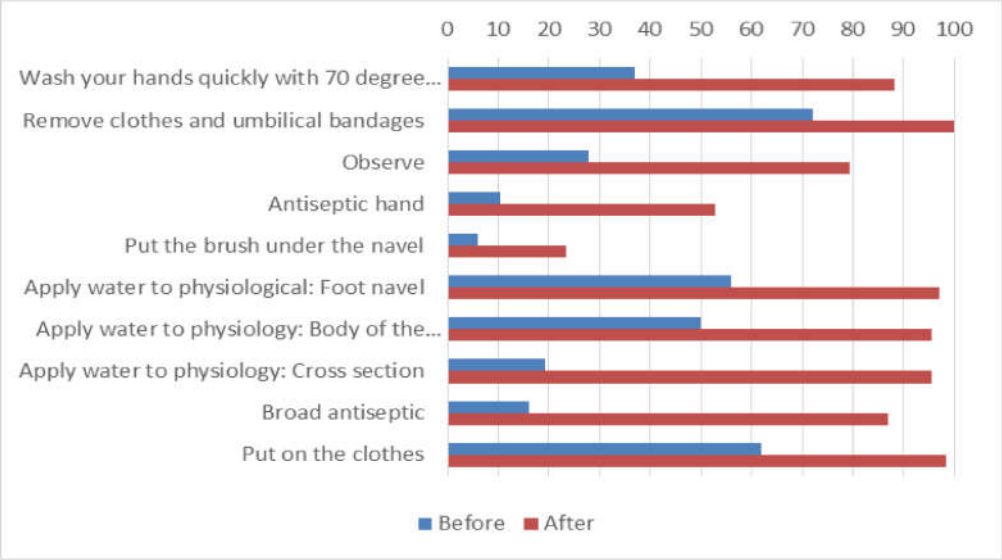

Figure 2. The Proportion of correct practice on the care of the navel after birth before and after the intervention.

Before the intervention: The majority of mothers who had wrong practice in putting up under the foot of the umbilical cord had 4 people (5.9%) and wrong practices in handwashing before putting up made up 10.3%. After the intervention: the correct practice rate of the surveyed mothers had changed, and 16 mothers had changed the way of putting under the umbilical cord (23.5%) and the rate of compliance with handwashing was also as true handwashing practice increased to 52.9%.

3.3. Describe the change in knowledge rate before intervention (pre-post-rate), test for change (Mcnemar Chi-_square test)

Table 3. Change in CSR knowledge rate before intervention (pre-post-rate), verification of the change.

Knowledge		**After intervention** *Frequency (Rate)*		**McNemar's ChiSquare**	**P_{exact}**
		Good	Not good		
Before the intervention	Good	2	0	48	<0.001
	Not good	48	18		

The study noted that 48 cases have improved knowledge from not good to good. McNemar Chi- square search showed a statistically significant difference.

3.4. Describe the change in practice rate right before the intervention (pre-post-rate), seek for change (Mcnemar ChSquare test)

Table 4. Change in the right rate of CSR practice before intervention (pre-post-rate), to determine the change.

Practice Chi_square		**After the intervention** Frequency (Rate)		**McNemar's**	**P_{exact}**
		Good	Not good		
Before the intervention	Good	7	0	57	<0.001
	Not Good	57	4		

The study noted that 57 cases had improved practice from not good to good. McNemar ChiSquare search showed a statistically significant difference.

3.5. The relationship between CSR knowledge and practice

Table 5. Relationship between CSR knowledge change and practice change.

Knowledge		**Practice Before – After**			**ChiSquare**	**Pexact**
		Frequency (Rate%)				
Before	After	Not good-Good	Not good–Not good	Good-Good		
Not good	Good	44 (92%)	0 (0%)	4 (8%)	15.6	0.004
Not good	Not good	12 (67%)	4 (22%)	2 (11%)		
Good	Good	1 (50%)	0 (0%)	1 (50%)		

Chi_Square test shows that knowledge changes were related to changes in practice with p = 0.004.

IV. DISCUSS

The results showed that before the intervention, there were 2.9% (3 ± 2.15) mothers with the right knowledge about neonatal umbilical care; After the intervention this ratio increased to 73.5% (7.1 ± 1.3). The rate achieved in this study was similar to the research results of Dao Thi Bich Lien [9] in 2017 at Tu Du Hospital with 98 mothers participating, showing that the total average knowledge points before consulting 3.2 ± 1.9 and after consulting 7.3 ± 1.3. For neonatal umbilical care practices, guidance at current public and private health facilities was effective for mothers taking care of independent umbilicals at home. The results of our study before the intervention were only 10.3% (3,6 ± 2,5) mothers who practiced proper care of neonatal umbilical cord, after the intervention this rate increased to 94.1 % (8.2 ± 1,2). This proved that, the results of our research had given the model of umbilical care intervention counseling, which has very high efficiency.

The total points of general practice of mothers before intervention was 10.3% (3,6 ± 2,5); After intervention, the rate of correct practice increased quite high, accounting for 94.1% (8.2 ± 1.2). The difference was statistically significant. According to author Saaka M. et.al (2018) over 418 mothers in Ghana's Lawra District found that the correct practice rate of mothers was 36.8% (154/418) [5]. According to Afolaranmi TO and colleagues [10] in 2018, over 324 mothers on umbilical care practice in Africa showed that good practice on umbilical cord care was 77.8% (252/324).

The relationship between the change in practice and changes in maternal umbilical care knowledge: Table 3.5 suspicion Analysis shows a statistically significant change (p = 0.004). Research results show that with mothers with good knowledge, the rate of change of practice is 100%. In contrast, in mothers who do not have knowledge changes, the rate of change of practice was 75%. The group improved knowledge higher than the group that did not improve, McNemar's knowledge and test. Therefore, knowledge improvement was related to improving practice.

V. CONCLUSION:

The mothers had a total score of general knowledge about neonatal umbilical care before intervention accounting for 2.9% (3 ± 2.15), after the intervention this rate increased to 49.6% (7.1 ± 1.3).

The mothers had a total practice before intervention score of 10.3% (3.6 ± 2.5), after the intervention, the rate increased to 94.1% (8, 2 ± 1,2).

There was a link between knowledge and practice.

Limitations: due to limited budget and time, the study only stopped at counseling and evaluating mothers taking care of umbilical cord at the hospital. But not monitored and observed to take care of the mother's umbilical cord at home and the time of umbilical cord loss of each child as well as the rate of umbilical cord infection of infant of mothers after discharge.

Conflict of Interest: The authors declare that they have no conflict of interest.

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