



The Using of The Cone Bag and The Satisfaction of Delivery Assistants in Measuring Post Partum Bleeding

Anita^{1*}; Purwati²; Kodri³; Nani Hernani⁴

^{1,2,3}Lecturer, Department of Nursing Poltekkes Kemenkes Tandjungkarang

⁴Lecturer, Abdul Moeloek Hospital Bandar Lampung

ARTICLE INFO

Article history:

Received 4 September 2020

Accepted 4 November 2020

Published 5 December 2020

Keyword:

Cone Bag
Satisfaction

ABSTRACT

The maternal mortality rate in Indonesia in 2015 was 305/100,000, which was still below the WHO target of 102/100,000, with the leading cause of death was postpartum haemorrhage. The delay in diagnosis can be caused by a delay in diagnosing postpartum bleeding due to errors in measuring blood loss. The purpose of this study was to determine the satisfaction of birth attendants in measuring postpartum haemorrhage using a cone bag so that the diagnosis of postpartum haemorrhage can be made correctly. This research aims to produce a product in the form of a cone bag as a measuring tool for postpartum haemorrhage. This type of research is a quantitative, quasi-experimental analytical research design. The study was conducted on 60 birth attendants in hospitals/health centres/maternity clinics in Bandar Lampung. The analysis used the T-test. The statistical analysis results showed an effect of the use of a cone bag on the satisfaction of birth attendants in measuring postpartum haemorrhage ($p = 0.000$). Birth attendants can use cone bags to measure postpartum haemorrhage. Hospitals/health centres/maternity clinics can facilitate cone bags to measure postpartum haemorrhage to provide job satisfaction for birth attendants (nurses/midwives/doctors).

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ABSTRAK

Kata kunci:

Kantung kerucut
Kepuasan
Persalinan

**) corresponding author*

Lecturer, Department of Nursing Poltekkes
Kemenkes Tandjungkarang

E-mail: anitabustami@yahoo.co.id

DOI: 10.30604/jika.v5i2.606

Angka kematian ibu di Indonesia tahun 2015 sebesar 305/100.000 masih berada dibawah target WHO 102/100.000, dengan penyebab utama kematian perdarahan post partum. Keterlambatan mendiagnosis dapat disebabkan oleh keterlambatan diagnosis perdarahan post partum, dikarenakan kesalahan dalam pengukuran jumlah darah yang hilang. Tujuan penelitian adalah untuk mengetahui kepuasan penolong persalinan dalam pengukuran perdarahan post partum dengan menggunakan kantung kerucut, sehingga dapat menegakkan diagnosis perdarahan post partum dengan tepat. Target penelitian ini adalah dihasilkannya produk berupa kantung kerucut sebagai alat ukur perdarahan post partum. Jenis penelitian kuantitatif, rancangan penelitian analitik quasi eksperimen. Penelitian dilakukan terhadap 60 responden penolong persalinan di Rumah Sakit/puskesmas/klinik bersalin di Bandar Lampung. Analisis menggunakan uji T. Hasil analisis statistik diperoleh ada pengaruh penggunaan kantung kerucut terhadap kepuasan penolong persalinan dalam pengukuran perdarahan post partum ($p=0,000$). Penolong persalinan dapat menggunakan kantung kerucut dalam mengukur perdarahan post partum, RS/Puskesmas/klinik bersalin dapat memfasilitasi alat kantung kerucut dalam mengukur perdarahan post partum sehingga memberikan kepuasan kerja dari penolong persalinan (perawat/bidan/dokter).



INTRODUCTION

The maternal mortality rate in Indonesia in 2015 was 305 per 100,000 births. The target set by the United Nations (UN) is 102 per 100,000 births. The causes of maternal death are bleeding, pre-eclampsia and infection (Risikesdas, 2018). 75% of maternal deaths are caused by bleeding (the leading cause of maternal death), infection, pre-eclampsia and eclampsia, childbirth complications, and unsafe abortion (<https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>). Other causes of maternal death are defined as four much three too Late, namely: too young (<20 years), too old (>35 years), too often or too many children (>3 children), too close in birth spacing (<2 years), being late in making decisions, arriving late at the health facility, being late in getting adequate help, because it was too late to come so that the handling was too late (Widyaningtyas, 2019). (<https://katadata.co.id/analysisdata/2018/05/30/rapor-merah-angka-kematian-ibu-indonesia>).

In the United States, 17% of the 4200 maternal deaths by pregnancy are caused by bleeding. In the UK, it is also reported that bleeding is a significant factor in maternal mortality. Meanwhile, in developing countries, it is an essential factor in maternal mortality. Ignoring blood loss during labor and delaying blood components are seen as factors that are often the cause of maternal death due to unavoidable bleeding. Inaccurate assessment or estimation of blood loss can lead to adverse sequelae. Delayed diagnosis and treatment can lead to hypovolemic shock and death.

Most labor complications are as unpredictable as postpartum haemorrhage. Birth attendants must be ready to provide quality services so that maternity mothers who experience childbirth complications can get services in a short time because some difficulties require emergency services in a matter of hours. The first contact of a maternity mother is a health worker at the health centre, a practising nurse or a practising midwife, so it requires accuracy in diagnosing, preventing/managing postpartum bleeding appropriately. For this reason, the tool used to measure the amount of bleeding that is easier, cheaper and more flexible is the availability of a measuring bag that can directly measure the amount of blood that comes out during the delivery process.

The research by Panggayuh, Jupriyono 2017, regarding the estimation of bleeding using the haemoglobin test method and the visual estimation method in postpartum mothers showed no difference in the measure of the amount of postpartum haemorrhage with the haemoglobin level examination technique and the visual estimation method. If the difference in hemoglobin levels in labor and two hours postpartum is more than 1.5 mg/dl, this indicates a postpartum haemorrhage. Based on these studies, traditionally, blood loss during the third stage of labour can be estimated visually with varying accuracy due to subjective observations.

The current standard of practice for assessing blood loss is a visual estimation by a health worker who sees blood during delivery and estimates the amount of blood loss. Analysis of blood loss during labor is critical. Accurate assessment of the amount of blood loss leads to management. Identifying the causes of blood loss helps a lot

in early diagnosis and treatment and prevents the morbidity and mortality associated with blood loss. Various methods can be used to measure or estimate the amount of blood loss after delivery. The visual method is a simple and non-invasive method that can be performed which is usually calculated by birth attendants, although several studies have shown that this visual method is not very accurate and has various drawbacks. Nurses or Midwives can measure the amount of bleeding correctly if they use a device in the form of a blood collection bag that has measurement accuracy, is easy and practical to use, protects the rescuer and is inexpensive. For this reason, it is important to create a tool that is easy to use but provides accurate results to more quickly establish the diagnosis of postpartum hemorrhage, so that management is carried out more quickly and provides satisfaction for birth attendants.

METHOD

This type of research is quantitative research. The research design used is a quasi-experimental research design that aims to investigate the causal relationship between the use of a cone bag on the satisfaction of birth attendants in measuring postpartum hemorrhage.

Time and Place The research was conducted in August - September 2020 and the place of this research was carried out at the Maternity Clinic, Public Health Center and Hospital in Bandar Lampung. The population is birth attendants at Puskesmas, Maternity Clinics and Hospitals in Bandar Lampung, a total sample of 60 nurses/midwives consists of 30 respondents who help deliver deliveries at hospitals and 30 help deliver at puskesmas and maternity clinics. The sampling technique used Consecutive sampling, namely taking respondents according to the inclusion criteria of the sample, namely nurses / midwives who helped normal deliveries or who experienced bleeding.

The data collection technique used a questionnaire, the birth attendant filled out a questionnaire sheet before the study was carried out, then used a cone bag to measure vaginal discharge. then the birth attendant was asked to fill out a satisfaction questionnaire about the use of the cone bag in terms of Tangibility (physical evidence), reliability (reliability), responsiveness (response), assurance (guarantee), Empathy (attention) so that the measurement of the amount of blood that comes out is accurate and supports the birth attendant. in the diagnosis of postpartum hemorrhage.

Analysis of the data used in this study is descriptive statistics in the form of data mean, standard deviation, and standard error of the mean and Inferential Statistics: used to test the research hypothesis by using the chi square test.

The ethical review was carried out at the Tanjungkarang Health Polytechnic KEPKN and has received a proper description of the "Ethical EXEMPTED" ethics, number 251/KEPK-TJK/IV/2020

RESULTS

The maternal mortality rate in Indonesia is increasing, in 2015 the maternal mortality rate reached 305 per 100,000 births. The target set by the United Nations (UN) is 102 per 100,000 births. The causes of maternal death are bleeding, pre-eclampsia and infection (Risksdas, 2018). 75% of maternal deaths are caused by bleeding (the main cause of maternal death), infection, pre-eclampsia and eclampsia, complications of childbirth and unsafe abortion <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>. Based on the high number of causes of death due to delays in the diagnosis of bleeding, the accuracy in measuring the amount of bleeding is very necessary so that diagnosis can be made quickly, and patient management will be more precise and faster.

In the following, the demographic data of respondents and the satisfaction of cone bag users are presented in the measurement of postpartum hemorrhage. The results of the study using a cone bag and delivery attendant satisfaction in measuring postpartum hemorrhage. Research on the use of cone pouches and the satisfaction of birth attendants in measuring postpartum hemorrhage, begins with making a cone bag design. The research team designed a cone bag that was made manually, then distributed to a number of 60 respondents, to be given written input regarding the design, color, and materials of silverware and plastic used. A total of 60 respondents gave answers in the form of answers to the following description:

Table 4.1 Respondents' input regarding the design, color and materials of silverware and plastic used in the manufacture of cone bags

No	Respondent suggestion	total	%	n
1	Design Shape			60
	Perlak Length 1m (to the back)	23	38	
	Neat/nice/fit	17	28	
	Adhesive extends from end to end	3	5	
	Given a blood drain	1	2	
	Leaking blood drain	2	4	
	An indentation/distance is made into the plastic bag so that the blood is accommodated, when it enters the cone bag.	11	18	
	Cone sacs are not effective at measuring bleeding	3	5	
2	Color			60
	Suitable (light brown)	14	23	
	Younger	12	20	
	Bright	19	32	
	Black	15	25	
3	Perlak and plastic raw materials			60
	Already good	34	57	
	SNI quality/high quality	2	3	
	Environmentally friendly	1	2	
	Flexible / like urine bag material	1	2	
	Easy to clean	6	10	
	Less thick	6	10	
	Slightly thin	5	8	
	Affordable price/easy to get	5	8	

The cone bag was then repaired according to the input of various birth attendants, after that a trial was carried out with 30 users and a cone bag was obtained that could be used in the delivery process. Cone bags that have been repaired according to

user input, are then used to measure the level of user satisfaction. The following are the results of research on the use of cone bags on user satisfaction

Table 4.2 Characteristics of respondents who assisted childbirth in Bandar Lampung City

No	Respondent Characteristics	Total	%	N
1	Age			60
	20-30 years old	30	50	
	31-40 years old	24	40	
	41-50 years old	3	5	
2	> 50 years old	3	5	
	Education			60
	D3	39	65	
3	D4/S1/S2	21	35	
	Job Status			60
3	Internship	21	35	
	Government employees	39	65	

Table 4.2 shows that the majority of birth attendants are in the productive age of 20-30 years (50%) and the age of 30-40 years (40%).

Table 4.3 Distribution of average satisfaction before and after the use of cone bags

No	Respondent satisfaction	Mean	SD	SE	p-value	N
	Birth attendant satisfaction					60
1	-Tangibility (physical evidence)					
	Before	11,40	2,451	0,316	0,000	
	After	15,27	4,395	0,567		
	- Reliability (reliable)					
	Before	14,13	3,929	0,507	0,000	
	After	19,28	4,475	0,575		
	- Responsiveness					
	Before	12,77,	2,459	0,317	0,000	
	After	16,82	3,481	0,449		
	- Assurance (Guarantee)					
	Before	11,08	1,942	0,251	0,000	
	After	13,82	3,347	0,432		
	- Empathy (Attention)					
	Before	11,15	1,505	0,194	0,000	
After	14,53	2,453	0,317			
2	Overall birth attendant satisfaction					
	Before					
	After	65,30	8,634	1,115	0,000	
		79,58	16,70	2,157		

In table 4.2 the average rescuer satisfaction score based on tangibility (physical evidence of a cone bag) the average score before using a cone bag is 11.40 with an SD of 2.451 and after using a cone bag is 15.27 with an SD of 4.395. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of the use of a cone bag on the satisfaction of birth attendants seen from the physical shape of the cone bag.

The average rescuer satisfaction score based on reliability (reliability) obtained an average score before using a cone bag is 14.13 with an SD of 3.929 and after using a cone bag is 19.28 with an SD of 4.475. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of using a cone bag on the satisfaction of birth attendants seen from the reliability of the cone bag.

The average rescuer satisfaction score based on responsiveness obtained the average score before using a cone bag was 12.77 with an SD of 2,459 and after using a cone bag was 16.82 with an SD of 3,481. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of using a cone bag on the satisfaction of birth attendants seen from the sense of responsiveness of the helper in the management of bleeding after being measured with a cone bag.

The average score of rescuer satisfaction based on assurance (assurance) obtained the average score before using a cone bag was 11.08 with an SD of 1.942 and after using a cone bag was 13.82 with an SD of 3.347. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of the use of a cone bag on

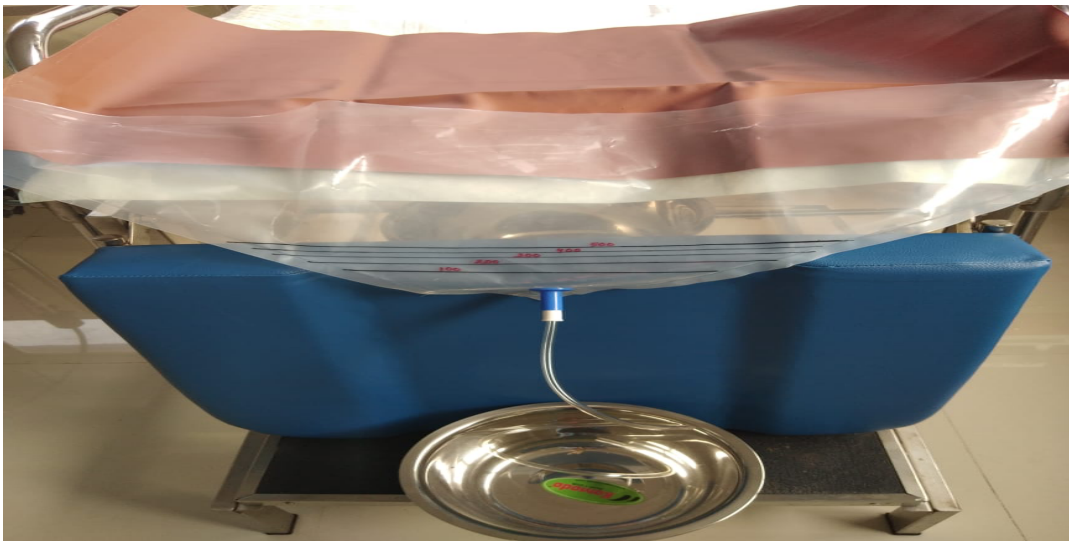
the satisfaction of the birth attendant seen from the rescuer's guarantee of the accuracy of the bleeding measurement as measured by the cone bag.

The average rescuer satisfaction score based on Emptay (attention) obtained the average score before using a cone bag was 11.15 with an SD of 1.505 and after using a cone bag was 14.53 with an SD of 2.453. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of using a cone bag on the satisfaction of birth attendants seen from the sense of empathy of the helper in the management of bleeding after being measured with a cone bag.

The average score of overall rescuer satisfaction obtained the average score before using a cone bag was 65.30 with an SD of 8.634 and after using a cone bag was 79.56 with an SD of 16.70. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of the use of a cone bag on the satisfaction of birth attendants in measuring postpartum hemorrhage.

DISCUSSION

Research on the use of cone bags and the satisfaction of birth attendants in measuring postpartum hemorrhage begins with making a cone bag design based on user input. The research team designed the cone bag to be made manually. Here are the various designs produced



The effect of the use of a cone bag on the satisfaction of birth attendants in measuring postpartum hemorrhage.

The results showed that there was a difference in the average satisfaction score before and after the use of a cone bag $p = 0.000$. The results of research on the cone sac are not yet available. The cone bag is made as a measuring tool against the background of the measuring instrument used to measure bleeding with a definite amount that does not yet exist.

So far, measurements have only been made based on visual estimates. This is the method most often used in daily practice to measure blood loss in labor, although this method sometimes requires experience from birth attendants to determine the diagnosis of postpartum hemorrhage. The use of a cone bag as a measuring tool is expected to predict blood loss close to the actual blood loss value. Experience is needed by health workers in predicting the amount of bleeding that occurs in postpartum mothers.

Another study related to the method of measuring postpartum hemorrhage was carried out by Panggayuh A and Jupriyono (2017) regarding the difference in the estimated bleeding volume between the hemoglobin test method and the visual estimation method in postpartum mothers with the results of 1) there is no difference in the

estimated amount of postpartum hemorrhage using examination techniques. hemoglobin level and visual method of estimation, 2). If the difference in hemoglobin levels in labor and 2 hours postpartum is more than 1.5 mg/dl, it indicates an increase in the amount of postpartum hemorrhage. (Journal of Health Sciences Vol. 5 No. 2, May 2017 111). The results of this study and the results of Panggayuh&Jupriyono's research explained that the measurement of the visual estimation method is very important, so that the accuracy of the data is obtained in establishing the diagnosis of postpartum hemorrhage, the experience of health workers as rescuers and the use of a cone bag, will provide satisfaction for birth attendants (nurses & nurses). midwife) in performing their professional duties.

Measurement of bleeding using a cone bag is carried out to see the amount of blood based on the amount of blood that comes out visually, to further strengthen the diagnosis of postpartum hemorrhage, one must also consider the clinical assessment carried out by the rescuer, based on the clinical assessment of estimated blood loss (doctor post) in the Indonesian Ministry of Health 2013 The following is an explanation of the clinical assessment that strengthens the assessment of postpartum hemorrhage:

Estimated Blood Loss

Clinical assessment				Estimated blood loss (ml) / Blood volume of pregnant women -100 ml/kg BW blood loss
Systolic blood pressure	Pulse Frequency	Acral Perfusion		
120	80 x/minute	<10%		< 600 ml (weight 60 kg)
100	100 x/minute	± 15%		900 ml
< 90	>120 x/minute	± 30%		1800 ml
<60-70	>140 x/minute until unpalpable	± 50%		3000 ml

Doctor Post, (2021) <http://dokterpost.com/diagnosis-dan-therapy-bleeding-post-birth/>

The use of a cone bag is expected to be an alternative in measuring postpartum hemorrhage, when compared with calculations using visual estimates such as pads, cone bag measurements are more accurate because pads have various different absorbing abilities, various types, sizes, thus making birth attendants less confident. with the amount of bleeding that occurred in the patient. Likewise with other methods that are also carried out through blood spill measurements. Blood spills on the floor with a diameter of 50 cm, 75 cm and 100 cm respectively represent blood loss of 500 ml, 1000 ml, 1500 ml. Kidney dish / nierbeken, able to accommodate 500 ml of blood. The stained incontinence pad / underpad, with a size of 75 cm x 75 cm can accommodate 250 ml of blood, but how wet the underpad is still cannot determine the actual amount of blood. including a lot of underpad waste, Kasa. Standard gauze measuring 10 cm x 10 cm is able to absorb 60 ml of blood, while gauze measuring 45 x 45 cm can accommodate 350 ml of blood.

The cone bag is a direct measurement method that is expected to provide more accurate measurement results, which will be used in collaborative efforts and diagnosis, so that there is no delay that can lead to more severe complications. Direct measurement is one of the oldest and most accurate methods of measuring blood loss. This method uses a device to collect blood directly and is used during labor to accurately measure blood loss. so far the direct measurement method, one of which is by placing a basin / bedpan or container in front of the external genitalia to collect and the other by using a copper funnel that passes through the bed mattress at the height of the buttocks where blood will flow under the bed, which is often used is tarpaulin with a bag at the end of which drapes the blood on the tarpaulin to collect in a bag at the end and measurements can be made.



The measurement method uses a conical and disposable design, it is cheaper, the measurement is more accurate, and the rescuer is protected from blood splashes after delivery. Accurate blood counts speed up the estimation of large blood loss, speed up diagnosis, so that prevention and early management can be carried out and efforts to reduce maternal mortality due to postpartum hemorrhage can be realized.

Visual estimation is the most frequently used method to estimate the amount of blood loss at the time of delivery, but the results are not very accurate due to various factors, but educational simulations and evaluations for this method should be carried out to improve accuracy. In addition, this method is easy to do. Direct calculation of the amount of blood loss is the oldest method of calculating blood loss after childbirth & this method only requires a container and a place to measure blood loss when the mother gives birth in any position and location. One drawback that is difficult to avoid is when blood is mixed with other fluids such as urine and amniotic fluid. In addition, this method cannot collect all the blood to be counted, such as those attached to gloves, aprons, linens and those attached to the mother's buttocks and back & the gravimetric method where we weigh all blood-contaminated materials such as linen, towels or gauze and then weigh subtracted by the weight of the material before contamination only requires an accurate weighing device but this method does not distinguish other fluids present in the material such as amniotic fluid and urine & the photometric method has some limitations.

The results of this study give satisfaction to the birth attendant because it provides confidence in establishing the diagnosis and management of the patient. Satisfaction is the level of one's feelings in this case the nurse that is felt by comparing the results and expectations. Richard Oliver argues that this means an assessment of a form of privilege of an item or service, providing a level of comfort related to the fulfillment of a need including meeting needs below or exceeding the expectations of service providers (Daryanto and Setyadi, 2014). The satisfaction of the birth attendant is related to the patient's recovery and the quality of the health services provided, including health facilities and facilities.

The results also showed that there were several respondents who stated that cone sacs were not effective in measuring postpartum hemorrhage, as many as 3 people (5%), this happened because of many factors that affect satisfaction, according to Lusa, 2008 the factors that affect satisfaction are:

The quality of the conical sacs for birth attendants is influenced by two things, namely the fact that the quality of the cone sacs are still hand made and not yet manufactured, so that the shape of the cone sac still needs quality improvement. Patients will feel satisfied if the results of their evaluation show that the health services (nursing) provided are of high quality.

The quality of service by using cone bags, can lead to satisfaction of cone bag users and patients who receive services. Customers or patients will feel satisfied if they get good service or in accordance with expectations. The quality of health services that can provide satisfaction comes from specific things such as hospital staff, service providers or other supporting services. The priority of increasing patient satisfaction is to improve the quality of service that is fair, friendly and polite, cleanliness, tidiness, comfort and security of the room as well as the completeness, readiness and cleanliness of medical and non-medical equipment (Marjabessy, 2008).

Emotional factors also determine the satisfaction of cone bag users based on the experience of using equipment related to the measurement of postpartum hemorrhage. In addition, experience also has a major influence on the emotionality of cone bag users towards a health service. Feeling satisfied with the results of blood measurement and diagnosis and collaboration because it is more accurate or dissatisfied because it is more complicated to use.

Price is also an important aspect that becomes input from users, including quality in order to achieve user and patient satisfaction. Even so, this element affects the patient in terms of the costs incurred, usually the more expensive the treatment price, the patient has greater expectations. Meanwhile, hospitals with the same quality but low prices provide higher value to patients.

According to Sangaji and Sopiah (2013) there are several factors that influence user satisfaction, including: the characteristics of birth attendants: are the characteristics of a person or a person's uniqueness that distinguishes one person from another. These characters are in the form of length of work as a birth attendant, educational background, culture and beliefs. Physical evidence in the form of conical sacs that can be seen and used. The guarantee of the cone bag tool is related to the advantages and disadvantages and how to use it. Concern: ease of use of cone bags, Reliability, the ability of cone bags to become measuring tools that provide more accurate, fast, precise, and satisfying measurement results.

Various inputs related to the cone bag which will be used as a measuring tool for postpartum hemorrhage, will be used to improve the product for measuring postpartum hemorrhage.

CONCLUSIONS

Based on the results of the analysis and discussion of the research results, the research findings are concluded as follows:

1. The average score before and after measuring the satisfaction of using a cone bag, including tangibility, reliability, responsibility, assurance and empathy, all explained an increase in satisfaction in providing care, especially confidence in assessing, diagnosing and determining action, as well as evaluation. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of the use of a cone bag on the satisfaction of birth attendants in measuring postpartum hemorrhage.

2. The average overall satisfaction score before and after the use of the cone bag the average score before 65.30 with an SD of 8.634 and after the use of the cone bag the average score of 79.58 with an SD of 16.70. The results of statistical tests obtained p value = 0.000, it can be concluded that there is an effect of the use of a cone bag on the satisfaction of birth attendants in measuring postpartum hemorrhage.

SUGGESTION

1. Scientific development

The cone bag is a measuring instrument model that makes it easier to measure bleeding to be more accurate, various models can be developed due to the importance of precise measurements related to establishing a diagnosis and accelerating and precise actions to overcome bleeding and

reduce maternal mortality. Cone bags can be developed even better by health experts. The recommendation for further research is a measuring tool for postpartum bleeding with a panties design with a modified urine bag.

2. Hospitals/Puskesmas/Maternity Clinics in the Bandar Lampung area

Health services can use and develop more accurate measuring tools so that it is easier to work and provide satisfaction to birth attendants. Hospitals/ Puskesmas/ Maternity Clinics can use a cone bag or provide modifications to the design of the tool regarding the measurement of postpartum haemorrhage.

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