

Analysis of Factors Affecting the Implementation of Uterine Exploration at the Third Stage of Labor

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ABSTRACT

Labor is one of the critical periods for women based on IDHS data up to 2020 shows that bleeding, hypertension in pregnancy, and infection are the causes of maternal death. Observation data was conducted in January-February 2022 at 5 Puskesmas in the city of Tasikmalaya, and it was found that 3 out of 5 women in labor underwent exploratory procedures during the third stage of labor because there were signs of retained placenta. The act of uterus exploration could be a portal of bacterial entry into the cavity and cause infection. This study aimed to look at the factors that affect the implementation of uterine exploration in the third stage of labor. The research method uses a sequential explanatory mix method to analyze the supporting factors for third-stage exploration actions by midwives. The research sample was 43 midwives. Quantitative results showed that there was no influence of characteristic factors on exploration actions ($p>0.05$), and there was no influence of self-efficacy on uterus exploration ($p>0.05$). Qualitative results showed that there were four main factors supporting exploration, such as visible signs of bleeding and weak contractions, ensuring that there were no remaining placentas and routine actions that were carried out. The research concludes that the exploratory action carried out is the midwife's accumulated experience, which results in the perception of dealing with cases of retained placenta in the third stage of labor, this makes the uterus exploration an additional action to anticipate problems.

Introduction

One of the critical periods of a woman's reproductive cycle is childbirth. The delivery process of a woman is influenced by several factors, including the state of a woman's health during the preconception period, conception, and pregnancy, which is a manifestation. Based on Indonesia Demographic and Health Survey (IDHS) data until 2020, it shows that childbirth is the highest contributor to direct death in women, caused by bleeding, followed by hypertension in pregnancy and infection. The number of deaths of women due to bleeding was recorded in 2020 in Indonesia as many as 4,627 people, with 1,110 of them dying due to hemorrhage. (Government department of health, 2020)

Labor has 4 phases that must be passed by a woman, 2 of the 4 phases are the phases with the most contributors to bleeding in cases of death, namely in the third stage (placental expulsion) and fourth stage (phase 2 hours postpartum). The third stage of labor is a phase of placental expulsion that only lasts a short time, which is 30 minutes in each phase of labor. However, in certain circumstances, the third stage can be a long phase and have difficulty causing problems in labor, namely bleeding caused by the holding of the placenta called placental retention. Placental retention is established when oxytocin

as part of active management third stage of labor (AMTSL) is given in a span of 2 times for 30 minutes, i.e. shortly after the baby is born, if there are no signs of placental detachment (globular uterus, elongated umbilical cord, and blood spurts), then a second oxytocin with the same amount of 10 IU IM is given at 15 minutes after the first oxytocin injection. If, after the second oxytocin injection, there is still no umbilical cord lengthening when controlled cord Traction / CCT is performed as a maneuver in AMTSL. Still, there are other signs, such as placental retention management being carried out and management being carried out with placental manual maneuvers. But under normal circumstances, sometimes the placenta is born spontaneously and entirely after the first oxytocin injection (within 15 minutes after the baby is born) but leaves the part of the membrane or cotyledons in the uterus/uterus that causes uterine contractions not optimal so that bleeding can occur. If this situation arises, then the exploration of the uterus to remove the remaining placenta left behind is an action that midwives must take. The cause of bleeding during the third stage is expelling the placenta and experiencing obstacles (placental retention). Placental retention has a prevalence of 15-20%, with an incidence of 0.1-0.3% each birth. (Prawirohardjo, 2014; WHO et al., 2000)

Several factors affect placental detachment in the third stage, namely the inadequate condition of his/contraction in third stage resulting from mismanagement during childbirth, illness/health condition of the mother and fatigue that occurs during labor, abnormalities in placental nidation/place of attachment of the placenta; the placenta is attached too deep, causing the placenta to be difficult to detach, placental deformity, uterine abnormalities, errors in the management of AMTSL, maternal factors such as age less than 20 and more than 30 years, parity, history of cesarean section in previous childbirth, history of curettage in abortion, anemia, history of last placental retention, comorbidities such as eclampsia, preterm labor, multiple pregnancies.(Alviani et al., 2018; Jumiatur & Nani, 2020; Sukmiati, 2015; Susiloningtyas & Purwanti, 2012; Tanjung, 2019)

In addition to complicating factors in pregnancy, self-efficacy in midwives' is an important thing that affects the care provided. Self-efficacy is a belief or drive a person shows when carrying out his role, including skills and cognitive abilities. Self-efficacy becomes an important thing in a person's achievement that will affect the ability to do something. According to Bandura, the concept of self-efficacy includes belief in things that must be achieved in the future is not based on experience, faith in the abilities possessed is not just hope, assessing specific circumstances not in general, having the confidence to be able to do something is not because of confidence. Self-efficacy is different from self-concept. Self-efficacy is based on experience, agreement with something or norm, or self-esteem related to self-assessment and self-control. It is more about self-confidence and the ability to do something to succeed. (Bandura, 1982; Classes & Classes, 2018; Schunk & K. DiBenedetto, 2021; Shiau et al., 2020)

WHO launched AMTSL to reduce the number of bleeding events that occur through AMTSL, namely by giving oxytocin as much as 10 IU intramuscularly, followed by stretching the umbilical cord under control when there are contractions as a procedure to accelerate the process of placental expulsion and reduce the amount of blood released. AMTSL's efforts, which are part of the standard labor handling procedure, succeeded in reducing the incidence of bleeding due to placental retention in the third stage

of labor, based on observational data conducted in January-February 2022 at 5 Puskesmas in Tasikmalaya city and regency, it was observed that midwives carried out uterine exploration on 3 out of 5 women during the third stage of labor, because there were signs of placental residue (left part of the placenta in the uterine cavity).

Research conducted by Irdayanti in 2021 found that midwives' perceptions of childbirth care have an important role in attitudes and behaviors in providing labor care in the third stage. To avoid excessive medical intervention, midwives need to understand the philosophy of care. Another study by Siregar in 2017 stated that active management in the third stage of labor carried out by midwives was influenced by education, motivation, experience, and knowledge. (Handayani, 2022; Irdayanti et al., 2021; Siregar et al., 2017). Exploratory action as an effort to prevent bleeding caused by placental residue becomes one of the portals of entry bacteria into the cavum that can cause infection, and infection becomes the third cause of death of women during labor and postpartum. Based on research conducted by Sukmiati (2015) regarding the evaluation of the implementation of AMTSL, it was found that there are still health workers who stretch the umbilical cord under control and do not wait for the uterus to contract, this can cause placental detachment is not optimal, and allows the placenta to rest in the uterine cavity. Knowing the factors that support midwives' clinical decision-making in carrying out exploratory actions after AMTSL becomes the basis for efforts to increase the third stage, reduce discomfort and psychological trauma in women during labor, and improve the quality of maternity care to support safe and comfortable expected delivery. Based on that statement, this study aimed to look at the factors that support the implementation of uterine exploration in the third stage of labor.

Method

The study design used a qualitative-quantitative approach, mixed method sequential explanatory, to analyze the factors that influence the midwife's actions in exploring the uterus after the placenta is born. A quantitative design was carried out first to see the influence of factors that influenced the actions of midwives in exploring the uterus in the third stage and continued with qualitative design to clarify other factors that became motives. The study was conducted in 4 public health centers in Tasikmalaya city with the criteria that public health centers are PONEC and able to PONEC (receive labor 24 hours / 7 days), have been accredited with the minimum standard of services, and have an average number of deliveries for one month above 20 deliveries. Data collection will be carried out in June-July 2023.

The sample in this study was taken by proportional sampling, namely by randomly taking 8-12 midwives from each public health center with a proportion of 2:3. The total subjects of this research amounted to 43 midwives to be observed when providing labor care using the questionnaire regarding knowledge of the implementation of AMTSL and self-efficacy in care during childbirth. The Questionnaires were tested for validity and reliability with a value of $R > 0.50$. The inclusion criteria are midwives with a minimum education of Diploma 3 and an active practice license, and the exclusion criteria are midwives who have not attended updated midwifery training.

The observation process involves a *single-blind* enumerator. Enumerators are young midwives who conduct the internship process at the five public health centers (one public health with one enumerator), which researchers have carried out in perception equations. Single-blind is carried out. Namely, the midwife giving lab center or care does not know which maternity care is assessed.

The research variables consisted of midwife characteristics, knowledge of MAK III, and self-efficacy as a factor of uterine exploration. The quantitative data was analyzed bivariate with chi-square and Fisher exact test as a derivative. The qualitative (explanatory) explanation of the trigger activity of uterine exploration in the third stage was obtained by manually transcribing an open questionnaire.

The research has received ethical approval from the health ethics commission of the Poltekkes Kemenkes Malang, with an Ethics number 276/V/KEPKPOLKESMA/2023, according to 7 (seven) WHO standards in 2011.

Results

Primary data collection using a questionnaire obtained an overview of respondents' characteristics as follows:

Table 1. Frequency Distribution of Respondent Characteristics

Characteristic	Frequent	
	n=43	%
Age		
<25 years	1	2,3
25-40	24	55,8
>40 years	18	41,9
Practical Experience		
<10 Years	13	30,2
10-20 years	21	48,8
>20 years	9	20,9
Employment Status		
Non-ci-village worker	22	51,2
Civillage worker	21	48,8
Education		
Diploma III	33	76,7
Diploma IV	10	23,3
Place of Practice		
Puskesmas only	28	65,1
Puskesmas and other health facilities	15	34,9
Knowledge		
Good	13	30,2
Less	30	69,8

Test normality and homogeneity; Levene test ; p value $>0,05$

Table 1 shows the distribution of respondents' characteristic features, as for the description of respondents obtained, most respondents are aged <35 years (60.5%), with the youngest age of 24 years and 13 people aged around 40 years, with most having practical experience over ten years (69.7%). Over half of the respondents graduated with a diploma III in midwifery, with 10 practicing in public health centers and other health facilities.

The level of knowledge referred to in this study is the knowledge that is reflected in decision-making when conducting active management of the third stage of labor (AMTSL), namely about the initial time of doing controlled cord Traction (CCT) after oxytocin injection, it was found that less than half (30.2%) had good knowledge about when the right time to do CCT. Most respondents performed

CCT without paying attention to the signs of placental detachment, namely the globular uterus, which indicates the contraction of the baby's post-expulsion of the baby, the lengthening of the umbilical cord as a result of the release of the maternal part of the placenta from the surface of the uterus, and visible discharge of blood from the birth canal caused by the detachment of the maternal part of the uterus which causes injury to the site of implantation of the placenta. (1–4) More than half of respondents took PTT the first 1-2 minutes after injecting oxytocin as part of AMTSL.

The results of bivariate analysis using chi-square to see the influence and magnitude of characteristic correlation on midwives' self-efficacy when performing CCT and exploratory practice behavior of uterine cavum cleansing after placenta birth, shown in the following table:

Table 2. Characteristic Correlation to Self-Efficacy and Characteristic Self-Efficacy to Exploratory Actions

Variable	Frequency		p value*	p value**
	n=43	%		
Age				
<25 years	1	2,3	0,704	0.013
25-40	24	55,8		
>40 years	18	41,9		
Practical Experience				
<10 Years	13	30,2	0,488	0,216
10-20 years	21	48,8		
>20 years	9	20,9		
Employment Status				
Non-ci-village worker	22	51,2	1***	0,203***
Civillage worker	21	48,8		
Education				
Diploma III	33	76,7	0,177***	0,451***
Diploma IV	10	23,3		
Place of Practice				
Puskesmas only	28	65,1	0,458***	0,318***
Pueksemas and other health facilities	15	34,9		
AMTSL Knowledge				
Good	13	30,2	1***	1***
Less	30	69,8		
Self-efficacy				
High	9	20,9		1***
Low	34	79,1		
Exploratory Practice Behavior				
Always	15	34,5		
Sometimes	28	65,1		

* value ρ characteristic with self-efficacy; Test chi-square; ** value ρ characteristics, self-efficacy against uterine exploratory practice, ***derivative-fisher exact test, expected cell value <5 ; $\alpha=5\%$;

Table 2 shows that there is no significant difference between age, practical experience, employment status, education, and place of practice on midwives' self-efficacy in assessing self-confidence when conducting AMTSL, especially CCT , this is shown by the ρ value >0.05 from the calculation results using the chi-square test, while the results of the knowledge test on self-efficacy are 1, it means that it does not affect at all.

The results of qualitative uterine exploration carried out in conjunction with quantitative data collection in 43 respondents obtained several factors that became the motive for midwives to explore the placental uterine cavity, namely as follows:

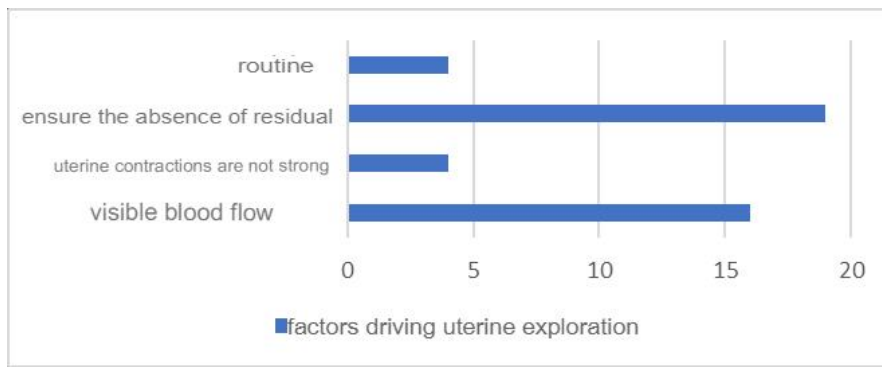


Figure 1. Factors Driving Uterine Exploration

Figure 1 shows the factors that support midwives in exploring the uterus. The factors driving exploration quantitative results related to the relationship of characteristics to uterine exploration actions carried out by midwives that there is no positive relationship, this is due to another impulse that leads to awareness of anticipation of the main problem that often arises during the fourth stage of labor, namely postpartum hemorrhage bleeding due to placental residue. The remaining placenta left behind in the uterine cavity becomes an obstacle for the uterus to contract so that the injury caused by the placental implantation scar is not closed optimally (the muscles do not contract optimally, resulting in the remaining blood vessels connecting the uterus and the maternal part of the placenta are not entirely closed). This results in open blood vessels, characterized by inadequate uterine contractions and blood discharge from the birth canal. This sign becomes the vigilance of midwives at the end of the third stage, so most midwives who see these signs will explore in anticipation of bleeding that can threaten the mother's life.

Discussion

In theory, the length of practice experience is related to a person's age. As a midwife age, she has a longer practical opportunity, considering the year of graduation and the length of formal education. In this study, it was seen that the overall characteristics did not show a significant positive relationship with the self-efficacy of midwives when exploring the uterine cavity. Midwives with a long practice period and practicing in more than one place did not show differences in self-efficacy related to implementing CCT in AMTSL. (Baker et al., 2021; Bassiouny et al., 2022; Bonet et al., 2022) This is by Bandura's theory of self-efficacy, that self-efficacy shown by confidence or confidence in doing an action cannot be separated from the events experienced by someone while doing something, causing doubt or specific considerations to prevent the occurrence of other more significant and dangerous problems. In addition, environmental conditions and habits become another factor that strengthens confidence in doing things, in this case, the confidence of midwives to assess with confidence that the placenta is entirely born after AMTSL is performed. (Chikkamath et al., 2021; Goodburn, et al., 2020; Ouyang et al., 2022).

The data presented in Table 2 showed no positive relationship between the exploration actions carried out by midwives after the placenta was born with the confidence of midwives when assessing the completeness of the placenta and the inherent characteristics of each respondent, with a value of

$p_{\text{val}} = 1$, so statistically it was said that the overall factors and levels of self-efficacy possessed by midwives, were not factors that encouraged midwives to take exploratory actions.

Physiologically, the uterus will contract to close the placental attachment wound after the placenta is born. The wound will not be closed entirely but will gradually return to its original state as uterine involution occurs (return of the uterus size to its original state). During the process, the uterus still secretes blood called lochea as an indicator of wound healing, under normal circumstances, the discharge will gradually decrease and disappear until the 10th day (lochea alba, white). (Gündüz, Ü., & Öztürk 2023) Blood output after the placenta is born is normal. Still, it needs to be ensured that there are no parts of the birth canal (portio, vagina, and perineum) that are injured and uterine contractions are in good condition (contracting adequately).

It is part of the procedure that every placenta born must be checked for placental completeness. In Indonesia, this is part of the standard of maternity care for the third stage of labor. Some midwives doubt the results of the examination due to the frequent lagging of the delicate membrane of the placenta that causes bleeding. This can be seen from the qualitative results of factors that support midwives in exploring Cavum Uteri (figure 1). Just as bleeding can be caused by several factors other than the rest of the placenta, uterine contractions can also be weak due to a filled bladder that interferes with the uterus contracting, trauma during the second stage of labor resulting from excessive intervention (*cruteller maneuver*). Before exploring the uterine cavity, it is necessary to ascertain the causative factors of bleeding and flaccid contractions. Inadequate contractions after 15 seconds of uterine massage are one indication of a pathological state. (Handayani, 2022; Heidari et al., 2023; Ika & Dewi, 2022; Irdayanti et al., 2021; Jumiatur, & Nani 2020; Juwita et al., 2023)

The occurrence of placental residue can be caused by the duration of uterine contraction that is too strong during the second stage of labor, causing a weakening of the strength of uterine contraction during the third stage of labor; this is often associated with incomplete placental removal and is usually the cause of secondary bleeding due to the remaining remains. There is no standard procedure related to uterine exploration as a routine action. The midwives do this as an anticipatory step without objective reason but using the experience of secondary bleeding as a justification by ignoring the discomfort of the client. Exploration of the uterine cavity at the end of the third time of delivery is considered inappropriate and can increase the risk of puerperal infection. However, these efforts can be made in anticipation due to the high incidence of bleeding due to the rest of the placenta (Keman, 2010; Kesehatan, 2020; Klassen & Klassen, 2018). So, one of the prevention efforts is to give broad-spectrum antibiotics such as prophylaxis. The use of antibiotics as a prophylactic effort carried out by midwives does not violate the code of ethics or related regulations. Midwives can give antibiotics as a preventive measure. (Kundu, A., & Jana 2021).

Diagram 1 provides an overview of the phenomenon that a person's self-efficacy is strongly influenced by the motives or drives that a person has when doing something. The drive to ensure that there is no placental residue is the dominant factor, this is driven by the high incidence of anemia in Indonesia, which is a predisposing factor to placental residue in the third stage. Lack of nutritional intake

is caused by low hemoglobin levels in a person's body, causing tissue to become fragile and easily torn. This occurs in maternity mothers who have anemia. This situation can cause the placenta to be more deeply embedded in the uterus so that fragile placental tissue can be left behind. (Goodburn et al., 2020; Mihretie et al., 2023; Oxorn, 2010).

This phenomenon became a motive for midwives to explore as part of the action at the time of childbirth. High cases of anemia, as well as many cases of secondary bleeding caused by placental residues that increase the incidence of postpartum infection, are solid motives for midwives to explore the placental postnatal uterine cavity. This situation requires efforts to minimize the practice of uterine exploration in the third stage as part of improving service quality, increasing client comfort and safety, and minimizing the use of antibiotics that are not needed so that midwifery care can return to the philosophy of reducing intervention.

Conclusions

There was no correlation between midwife characteristics and self-efficacy factors on uterine exploration at the time of childbirth, with the findings found that the main driving factor for exploration was the experience of secondary postpartum hemorrhage due to placental residues and postpartum infection due to placental residues, which made a strong reason for exploring the uterus at the third stage. This is reinforced by the environment, namely, all midwives who are respondents explore the uterus as an additional measure at the time of childbirth.

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