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Outcome of Active and Physiological Management of Third Stage of Labour in a Tertiary Hospital in Aba, Abia State.

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ABSTRACT

Background: Active management of third stage of labour involves giving prophylactic uterotonic agents, early cord clamping and cutting and, the use of controlled-cord-traction to deliver the placenta, while the physiological management of third stage of labour is a natural process that occurs following the end of the second stage of labour. This aim is to assess outcome of third stage of labour management outcome between active and physiological management during vaginal delivery.

Method: The study was a cross-sectional comparative analytic survey research design. The sample size is 200 participants comprising 150 midwives and 50 doctors, obtained through census sampling. Data was collected using self-structured questionnaire. Data analysis was done using SPSS.

Findings: About 65% of the respondents utilized active method while 35% of the respondents utilized physiological method. Outcome of physiological method revealed that 55% of the respondents never encounter uterine inversion and accidental cutting of the umbilical cord while the placenta is still in-utero respectively. 55% respondents expressed that retained placenta and blood loss is always expected in this method. 60% of respondents always encounter PPH while managing their patients on physiologic method.

Conclusion: The outcome of physiological method includes prolonged third stage period, retained placenta and increased blood loss, while the outcome of active method includes short period of third stage of labour, decreased blood loss, uterine inversion, accidental cutting of umbilical cord.

Keywords: Management, assessing, outcome, active, physiological, third stage of labour, tertiary hospital, Abia State

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INTRODUCTION

Third stage of labour is the period of time after the baby's delivery, when the placenta separates and is expelled from the uterine cavity alongside the membrane.[1] Third stage of labour is the period following the completed delivery of the baby.[2] It is to be noted that a vaginal delivery can, within a minute, become abnormal and a successfully completed delivery can turn swiftly to a disaster.[2,3] Oladapo et al. added that how long the third stage of labour lasts and its complications are affected by the rate of uterine contraction and how long it takes the placenta to separate[3]. The midwife should immediately recognize that form a practical perspective, the risk of complications continues for some period after the delivery of the placenta.[4] There are two approaches to care during the third stage of labour.[5] These include Active and Physiological (expectant) method of third stage management. Active management of the third stage is a method of shortening the stage between when the baby is born and when the placenta is delivered.[6] The third stage is when the mother is at risk of having a post-partum haemorrhage (PPH). Oxytocin helps the uterus to contract quickly and the contractions to last for longer. The third stage is viewed as the most dangerous stage of labour owing to the likelihood of PPH occurrence.[7]

It is believed that when a woman has had a physiological labour and delivery, a physiological third stage of labour is expected and the midwife needs to be competent in both care options.[2] The main principal of physiological management is a "Hands off" approach, where signs of placental separation are awaited and the placenta is delivered spontaneously or with the aid of gravity, maternal pushing or sometimes nipple stimulation.[8] The signs of placental separation you might observe is the woman may fidget and may state that she has a contraction[2]. The advantage of the physiological method over the active method of third stage of labour management is the non-administration of uterotonic[3]. During the third stage of labour some degree of hemorrhage always occur and the need then arises to limit the amount of the hemorrhage to minimum possible level.[9] When considering which option of third stage of labour to provide, the evidence to-date has suggested that active management of third stage of labour is the optimum approach for women in hospital setting.[10] Active management of third stage of labour is aimed at accelerating delivery of the placenta to reduce blood loss.[3] It does not rely solely on the woman's body to produce oxytocin and birth her placenta. Instead, a prophylactic uterotonic drug (exogenous oxytocin) is given to accelerate the contractility of the uterus and prevent postpartum haemorrhage.[11] Prophylactic uterotonic drugs are a key component in reduction of PPH.[12] Other components of active management include delayed cord clamping and cutting of the cord and controlled cord traction.[1,12] Delaying cord clamping between 1 and 3 minutes after birth can have positive effects on the baby such as higher birth weight, early haemoglobin concentration and increased iron reserves up to 6 months after birth.[13] Study has noted that when presented with the available research evidence and the subsequent critiques, women may choose physiological third stage care[9]. Uterotonic drugs can increase the risk of hypertension, nausea and vomiting for some women.[14]

What choice are doctors and midwives making in managing the third stage of labour in the area of study? This study intends to determine, between active and physiologic management of third stage of labour during spontaneous vaginal delivery, the outcome achieved. Do the health professionals prefer active or physiologic third stage of labour? The study compares the outcome of active management of third stage of labour with that of physiological method of management of third stage of labour in the place of study.

METHOD

The study was a cross-sectional comparative analytic survey research design. This study was carried out at the Abia state University Teaching Hospital, Aba. The central location of the hospital makes it readily accessible to everybody who needs health care services from within or outside Abia state. The population of the study (208), consisting of 157 midwives and 51 doctors working at the Obstetrics and Gynecological department of Abia state University Teaching Hospital, Aba. Census sampling technique was adopted. The sample respondents are 200 due to poor and incomplete filling of 8 questionnaires. The instrument for data collection was a self – constructed structure questionnaire. The instrument was tested and a reliability index of 0.82 was obtained. Convenience sampling was utilized in data collection Data was analyzed using Statistical Package for Social Sciences (SPSS) version 25. Ethical principles were applied after receiving approval from the institution's Ethical Review Board. Confidentiality,

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anonymity, autonomy, non-malfeasance, voluntary participation and withdrawal were applied.

RESULTS

Demographic Data

The study participants involve 15% of the respondents had acquired OND, 20% had acquired HND, 30% had BNSc., 10% had, 10% had M.Sc. while 5% had PhD, while 20% had MBBS. 7% of the respondents were between 20 -30 years, 65% were between 31 – 40 years, 23% were between 41 – 50 years, 5% were 51 years and above.

Table 1: Types of third stage management approach

Variable	F	%
Active	130	65
Physiological	70	35
Total	200	100

Table 1 shows that 130 (65%) of the respondents use active method while 70 (35%) use physiological method to manage stage of labour.

Table 2: Outcome of active method of third stage management of labour in ABSUTH, Aba.

Outcome	Always -freq (%)	Sometimes -freq (%)	Rarely -freq (%)	Never -freq (%)
Postpartum haemorrhage	24 (12%)	20 (10%)	46 (23%)	110 (55%)
Retained placenta	20 (10%)	90 (45%)	60 (30%)	30 (15%)
Cord cutting	40 (20%)	80 (40%)	60 (30%)	40 (20%)
Blood loss	20 (10%)	80 (40%)	40 (20%)	60 (30%)
Uterine inversion	50 (25%)	60 (30%)	50 (25%)	40 (20%)

Table 2 revealed that about 24 (12%) of respondents always encounter PPH while using active method, 20 (10%) sometimes encounter PPH, 46 (23%) rarely encounter PPH while 110 (55%) never encounter PPH while utilizing active method. 50 (25%) of the respondents said their patients always has uterine inversion as they use active method, 60 (30%) sometimes encountered uterine inversion, 50(25%) rarely and 10 (20%) never encounter uterine inversion. This shows that PPH is less likely to occur with the use of active method in the management of third stage of labour.

Table 3: Outcome of physiological method of management of third stage of labour.

Outcome	Always -freq (%)	Sometimes -freq (%)	Rarely -freq (%)	Never -freq (%)
Postpartum haemorrhage	120 (60%)	50 (25%)	20 (10%)	10 (5%)
Retained placenta	110 (55%)	50 (25%)	30 (15%)	10 (5%)
Cord cutting	10 (5%)	30 (15%)	50 (25%)	110 (55%)
Blood loss	110 (55%)	50 (25%)	30 (15%)	10 (5%)
Uterine inversion	10 (5%)	30 (15%)	50 (25%)	110 (55%)

Table 3 shows that while utilizing physiological method in the management of third stage of labour, about 120 (60 %) of the respondents agreed to have always encountered PPH, 110 (55%) always come across retained placenta, 10(5%) always encountered cord cutting, 110(55%) and 10(5%) encountered blood loss and uterine inversion respectively. This shows that the rate of PPH is always high with this method of management while it helps to reduce the incidence of uterine inversion.

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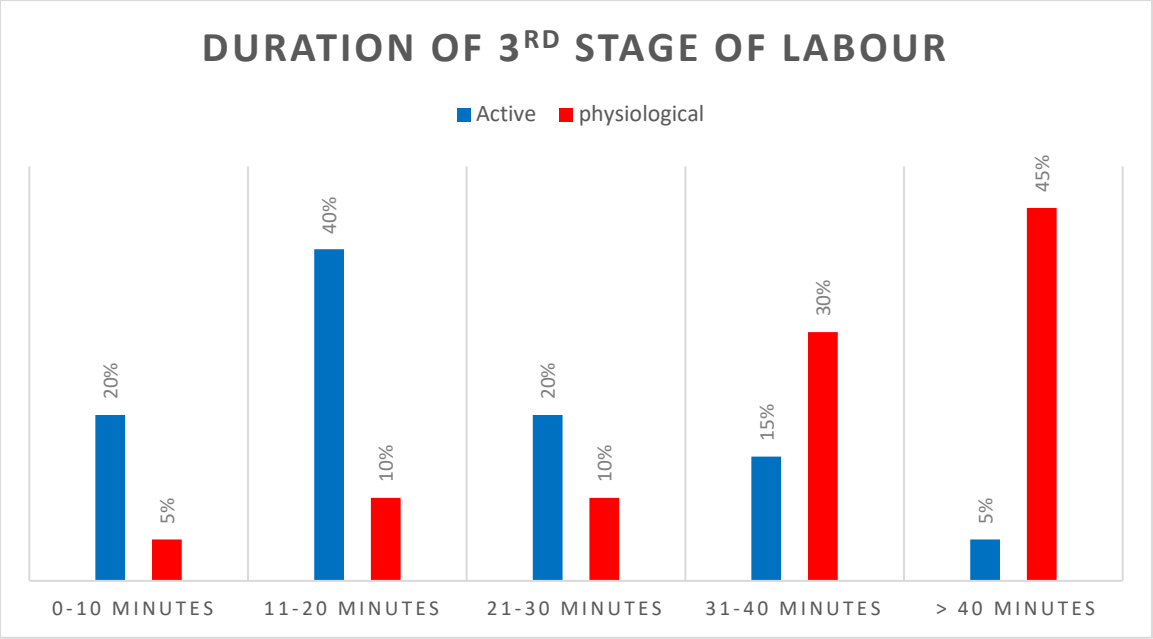

Fig. 1 Duration of 3rdStage of Labour in terms of duration

Fig. 1 shows that 20% of the respondents said that active method last between 0-10 minutes, 40% said it last between 11 – 20minutes, 20% said it last between 21 – 30 minutes, 15% said it last between 31 – 40 minutes while 5% said it last for > 40 minutes. For physiological, 5% of the respondents said 3rd stage of labour last between 0 – 10 minutes, 10% said it last between 11 -20 minutes, 10% said it last between 21 – 30 minutes, 30% said it last between 31 – 40 minutes while 45% said it last > 40 minutes. This shows that the duration third stage of labour is likely to be prolonged if physiological method is to be used and the use of active method helps in the reduction of third stage of labour

Table 4: Recorded timing for cord clamping during third stage of labour.

Method	Items	Frequency	Percentage (%)
	When is cord usually clamped		
	Immediately or within 10 seconds	40	20
	20 – 30 seconds	140	70
	30 – 60 seconds	20	10
	1-3 minutes	0	0
	Any time after 3 – 5 minutes	0	0
Physiological	After 3 minutes	20	10
	After cessation of cord pulsation	145	72.5
	Before placental delivery	20	10
	After delivery of placenta	15	7.5

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Table 4 revealed that 20% of the respondents said that cord is usually clamped immediately or within 10 seconds, 70% said that cord is usually clamped between 20 – 30 minutes, 10% said that cord is usually clamped between 30 – 60 minutes. For physiology, 10% said that cord is usually clamped after 3 minutes, 72.5% said cord is usually clamped after cessation of cord pulsation, 20% said cord is usually clamped before placental delivery while 15% said cord is usually clamped after delivery of placenta.

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DISCUSSION

The results show active and physiological methods are the management of third stage of labour for vaginal births. Almost two-thirds of the respondents utilize active method while about one-third of the respondents utilize physiological method for third stage management. Majority of those utilized physiological method explained that it is because of patients' choice and related to their underlying health condition such as pre-eclampsia and/or eclampsia. This finding is supported by the works of Elbourrne et al, who noted that oxytocin has a vaso-constrictor effect and has the tendency of elevating blood pressure and should not be used for patients who have elevated blood pressure[15]. The responded who employed active third stage management stated that it provides more safety to the mother and aids in the improvement of their skill.

The outcome of active method of management of third stage of labour according to the study revealed one-tenth (1/3) of respondents report occurrence of PPH always. A little below a third of the respondents rarely witness PPH event during active management of third stage of labour. This finding is in line with that of Lesley et al. who stated that active method assumes that safety is increased by the provision of exogenous oxytocin to increase the contractility of the uterus and shorten the time/length of third stage of labour, thereby minimizing blood loss[16]. On the other hand, one quarter of the respondents always encounter uterine inversion. This is an iatrogenic event arising from the pulling involved in the process of active third stage management. 40(20%) always come across accidental cutting of umbilical cord while the placenta has not delivered. This is in line with the findings of Burke et al. who stated that the risk factor for inversion of the uterus include the use of controlled cord traction, morbidly adherent placenta pushing on the top of the uterus abdominally prior to the placental separation, uterine atony, placenta previa and connective tissue disorders[17]. This complication of third stage of labour is common with the use of active method and is evidenced by seeing the uterus coming out of the vagina. Efforts should be made by manually replacing the uterus, in severe cases, surgery can be done. Oxytocin, antibiotics, analgesic is given following the procedure. Active management aims to accelerate delivery of the placenta to reduce blood loss. Active management does not rely solely on the woman's body to produce oxytocin and birth her placenta. Instead, a prophylactic uterotonic drug (exogenous oxytocin) is given to accelerate the contractility of the uterus. This aims to cause the placenta to separate from the uterus wall more quickly and, in turn, reduce bleeding.

Outcome of physiological method revealed that more than half 110(55%) of the respondents never encounter uterine inversion and accidental cutting of the umbilical cord while the placenta is still in-utero respectively. 110(55%) respondents expressed that retained placenta and blood loss is always expected in this method, respectively. 120(60%) respondents always encounter PPH while managing their patients using physiological method.

Physiological management is also known as passive or conservative management. The main principle of physiological management is to support the woman during labour and birth so her body can produce optimal levels of endogenous oxytocin. This is achieved by providing a warm and calm environment during labour and birth, encouraging the woman to have skin-toskin contact with her baby and only intervening in labour and birth when necessary.[18] Physiological management the practitioner also watches and waits for signs of placental separation, after which the placenta is birthed spontaneously or with the aid of gravity and maternal pushing.[1] Anything that interferes with this oxytocin release by the woman's body will reduce the effectiveness of a physiological third stage of labour.[18,19]

Physiological method of management of labour is mainly used at the community Health centres, Delivery homes, some maternity homes, Traditional Birth Attendance (TBA) or in any situation where there is absence of uterotonics.

Prophylactic uterotonic drugs are a key component in this reduction of PPH.[12] Other components of active management include delayed cord clamping and cutting of the cord and controlled cord traction.[1,12].

Recorded timing for cord clamping in third stage of labour for vaginal births.

The findings of the study revealed that 40(20%) of the respondents said that cord is usually clamped immediately or within 10 seconds, 140(70%) said that cord is usually clamped between 20 – 30 minutes, 20(10%) said that cord is usually clamped between 30 – 60 minutes. For physiology, 20(10%) said that cord is usually clamped after 3 minutes, 145(72.5%) said cord is usually clamped after cessation of cord pulsation, 40(20%) said cord is usually clamped before placental delivery while 30(15%) said cord is usually clamped after delivery of placenta. The finding of the study is in accordance with that of previous studies.[20,21,22,23] This study was conducted only in public tertiary hospital, and this might be what brought the difference.

Implications of the findings

Some implications of the findings of this study is the need for individualized person-centered provision of 3rd stage of care. This requires an effective partnership between the pregnant woman and with her midwife. Furthermore, health institutions should arrange training for all midwives on the management of third stage of labour.

Conclusion

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The physiological method involves supporting the woman's physiological changes during the third stage of labour, signs of placental separation are awaited, and placenta is delivered spontaneously. On the other hand, active management of labour involves the administration of uterotonic agents, early cord clamping and the use of CCT to deliver the placenta. The outcome of physiological method includes prolonged third stage period, retained placenta and increased blood loss, while the outcome of active method includes short period of third stage of labour, decreased blood loss, uterine inversion, accidental cutting of umbilical cord.

Declarations

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